MONONGAHELA RAILWAY COMPANY SHOPS
Water and 17th Streets
Brownsville
Fayette County
Pennsylvania

HAER NO. PA-218

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

REDUCED COPIES OF MEASURED DRAWINGS

Historic American Engineering Record
National Park Service
Department of the Interior
P.O. Box 37127
Washington, D.C. 30013-7127

HISTORIC AMERICAN ENGINEERING RECORD

MONONGAHELA RAIWAY COMPANY SHOPS
HAER No. PA-218

Location:	Water Street and Seventeenth Street, Brownsville, Fayette County, Pennsylvania
Construction Date:	1903-1925, and 1953-54
Builder:	Monongahela Railway Company
Present Owner:	Monongahela Railway Company; Conrail will assume ownership in 1992
Present Use:	Support shops for Monongahela Railway Company
Significance:	The Monongahela Railway Company Shops reflect the support needs of a railroad significant in the coal, coke, and steel industries of Southwest Pennsylvania in the twentieth century, particularly for the era of the 1920s, during the expansion of the Monongahela Railway Company system.
Historian:	Dave Jardini, 1992

COAL ROAD: THE HISTORY OF THE MONONGAHELA RAILWAY, 1901-1992

For more than ninety years the hollows and valleys of the broad coalfields between Brownsville, Pennsylvania and Fairmont, West Virginia, have resounded with the baritone voice of the trains of the Monongahela Railway Company. First came the rhythmic chugging of smoke-belching steam locomotives that served the innumerable coal and coke operations dotted across the region. Today it is the roar of diesel locomotives that broadcasts the approach of coal trains hauling black fuel from mines that are now few in number but vast in scale. This paper seeks to capture the history of the Monongahela Railway, from its early years of prosperity through its years of hardship, and analyze its development within the context of changing economic and technological circumstances. The organization of the essay is essentially chronological, dividing the history of the Monongahela Railway into four periods: 1900 to 1930, 1930 to 1948, 1948 to 1980, and 1980 to the present. Each of these periods represents a distinct era in the life of the road and is distinguished by economic, technological, or organizational characteristics. Within each of the periods, this study seeks to relate both the Monongahela's history and those broader forces which have shaped and directed its development. Certainly the story of the Monongahela Railway is inextricably woven among such contextual forces as labor disputes, dieselization of railroad motive power, and the decline of the coal industry. This study seeks to place the history of the Monongahela Railway in the context of these forces.

YEARS OF PROSPERITY: 1900-1930

The Development of the Lower Connellsville Coal Field

The story of the Monongahela Railway begins in 1900 with the formation of the Monongahela Railroad Company for the purpose of tapping the rich resources of the Lower Connellsville field of the Pittsburgh coal seam. The Pittsburgh seam is by far the most commercially important coal bed in Pennsylvania and has been referred to as the single most valuable mineral deposit in the world.[1] The main bench of this seam was formed of organic

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[1]Donald G. Puglio, "Production, Distribution, and Reserves of Bituminous Coal in Pennsylvania," in Pennsylvania Coal: Resources, Technology, and Utilization, eds. Shyamal K. Majumdar and E. Willard Miller (Easton, PA: Pennsylvania Academy of Science, 1983), 31-32.

materials deposited in swamps between 280 and 310 million years ago and averages between five and eight feet in thickness.[2] One of the most uniform strata known, the Pittsburgh coal bed displays an absence of faulting and is exceptionally well suited to mining. Indeed, the earliest accounts of life in western Pennsylvania are filled with reports of abundant coal supplies, the Penn family having sold mining rights in the Pittsburgh seam on Coal Hill, now Mount Washington, across the Monongahela River from Pittsburgh before 1800.[3] The vastness of the Pittsburgh seam is reflected in the fact that after 150 years of intensive mining, the seam retains some 3.2 billion tons of recoverable reserves or about 15 percent of the total remaining reserves of bituminous coal in Pennsylvania.[4]

Within the extensive Pittsburgh seam, perhaps the most significant single field is the Connellsville coal field. When the coal of the Pittsburgh seam was first formed, it lay in a continuous blanket under what is today western Pennsylvania and northern West Virginia. Subsequent lifting of the earth's surface and erosion, however, left a barren area which isolates a long, narrow deposit on the extreme northeastern margin of the seam. This field extends in a southwesterly direction from the vicinity of Latrobe in Westmoreland County, Pennsylvania for approximately 42 miles to York Run in Fayette County, Pennsylvania. Its short axis varies in width but averages only three and one-half miles and gives the field a total area of about 147 square miles.[5]

The significance of the Connellsville field lay in the extraordinary suitability of its coal for the production of coke, the fuel used in modern blast furnaces. Used locally for foundry operations as early as the 1830s, coke from the Connellsville field was first employed in Pittsburgh at the Clinton iron furnace in 1859, and its superior qualities became immediately

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[2]William Spackman and Alan Davis, "Origin, Characteristics, and Properties of Pennsylvania Coal," in Majumdar and Miller, 13.

[3]Puglio, "Production, Distribution, and Reserves," 33.

[4]Ibid.

[5]John W. Boileau, Coal Fields of Southwestern Pennsylvania, Washington and Greene Counties (Pittsburgh: John W. Boileau, 1907), 56, and John Aubrey Enman, "Population Agglomerations in the Connellsville Coke Region," (Ph.D. diss., University of Pittsburgh, 1962,) 2.

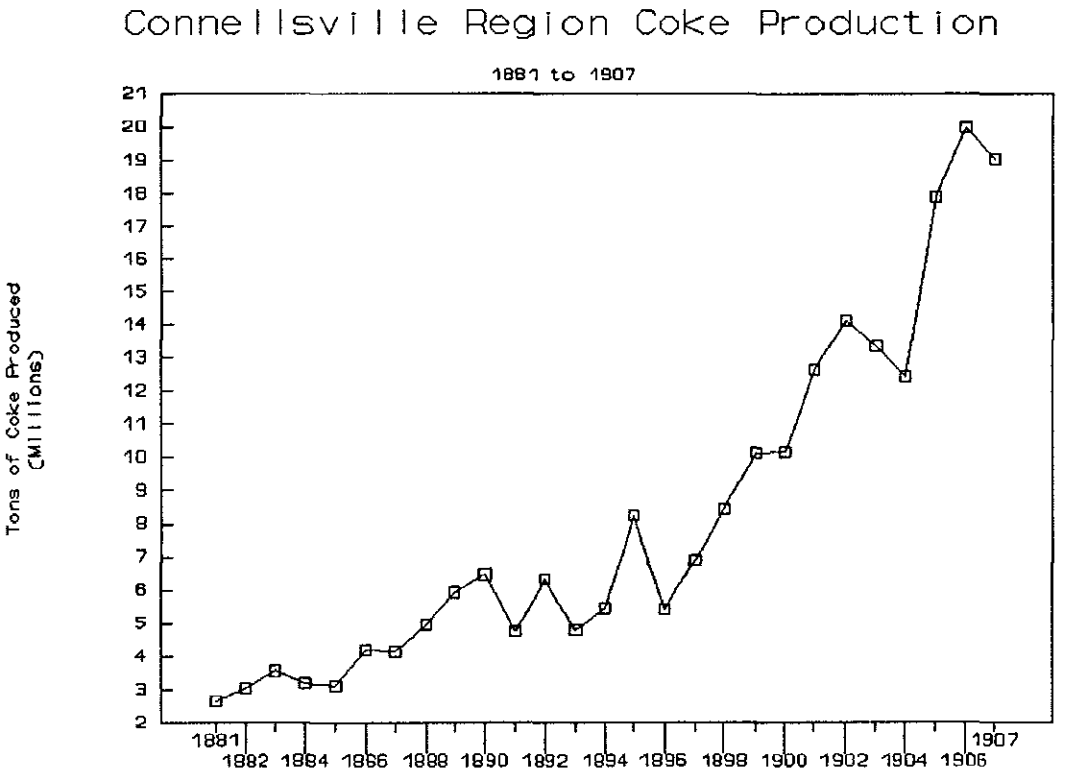

Chart 1

apparent.[6] With the rapid expansion of both wrought iron and Bessemer steel production in the Pittsburgh area during and after the Civil War, exploitation of the Connellsville coking coal resources grew dramatically. In 1870 the United States census indicated there were only 25 coking facilities in the country. By 1876 there were 45 operations in the Connellsville region alone, producing 26,000 tons of coke per week from 3,578 ovens. Chart 1 illustrates the explosive growth of the coking industry

[6]Boileau, Coal Fields, 55.

in the Connellsville region between 1881 and 1907, when production expanded from 2.6 million to over 19 million tons annually.[7]

The advantages of Connellsville coal for coke-making lay in both its physical and chemical characteristics. Physically, coal from this field was relatively soft and, due to inherent fractures, broke into small cubes during mining. This tendency eliminated the need to crush the fuel before charging it into the coke ovens, again minimizing costs of production.[8] Also, the Pittsburgh seam in the Connellsville region averages 8' to 11' in thickness, high enough for a miner to stand at his work. Because of these qualities, the coal was relatively easy to mine and, especially in the days of pick and shovel mining, quite economical to produce.[9] Additionally, the product of the Connellsville ovens displayed a cellular structure of great strength, enabling it to bear large burdens in the blast furnace. Chemically, the coal from the Connellsville field was exceptionally "clean," with high percentages of fixed carbon and minimal levels of impurities such as phosphorus, sulphur, and silicon. Both physically and chemically, Connellsville coal was eminently suited for the production of coke.

Connellsville coal was not, however, suited for long distance shipment. While its tendency to break into small pieces during extraction lessened the cost of coke-making, it resulted in the coal's disintegration during the rough handling of long distance rail transport. Consequently, coke ovens were built adjacent to the coal mines. This led to the emergence of integrated mining and coking complexes throughout the Connellsville region. In only ten years, from 1870 through 1879, forty such operations were opened in the region.[10]

Despite the unique qualities of Connellsville coal for coke production, by 1900 many industrial interests, particularly steelmakers, sought to develop metallurgical coal resources outside of the Connellsville field. This interest was stimulated by several circumstances. First, the expansion of steel production in the United States, especially after the depression of 1893-96, greatly expanded demand for coke. The pressures created by this mushrooming demand were multiplied by the fact

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[7]Ibid.

[8]Enman, "Population Agglomerations," 64.

[9]Ibid., 58.

[10]Ibid., 142.

that the coke production of the Connellsville region was virtually monopolized by the H.C. Frick Coke Company, a subsidiary of Carnegie Steel. By 1896, Frick owned 12,000 of the 18,000 coke ovens and 45,000 of the 60,000 acres of coal land under development in the region. This domination was compounded by the fact that most smaller producers sold their coke directly to Frick, who was thus able to control the coke market.[11] This put Carnegie Steel's competitors at a severe disadvantage and encouraged them to invest in their own proprietary coke operations outside of the Connellsville region.

The most important factor driving interest in coking development outside the Connellsville region, however, was the rapid depletion of reserves in the old field. By 1900 it was estimated that more than a quarter of the coal in the Connellsville field had been exhausted. If production rates after 1900 continued at the same rate as was the case in the 1890s, a conservative assumption based on industry growth, it was estimated that the entire field would be depleted by 1925.[12] Thus American steelmakers turned to the undeveloped Lower Connellsville coal field as an alternative source of coke.

The Lower Connellsville coal field, also known as the Klondike region, consists of that portion of the Pittsburgh seam lying in the southwestern part of Fayette County, Pennsylvania, south of Redstone Creek and west of the Connellsville outcrop. The western boundary of the Klondike lies along the Monongahela River, but the coal underlying the region extends westward beyond the Monongahela River into Greene and Washington counties, where the coal displays characteristics typical of the Pittsburgh seam but runs deeper and is less accessible. The coal of the Lower Connellsville field is softer than that of the old Connellsville field and produces slightly larger coke, but is otherwise similar in its properties. The delayed development of this field was due to a deeply rooted prejudice among nineteenth-century coke makers and ironmasters against the quality of all coke produced from Pittsburgh seam coal mined outside of the Connellsville region. It was not until systematic tests of coke from the Klondike were performed in 1896 and 1897 that this prejudice was abandoned.[13]

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[11]"The Connellsville Coke Regions: Their Past, Present and Future," The [Connellsville, PA] Weekly Courier, May 1914, 7.

[12]Boileau, Coal Fields, 56, 59.

[13]"The Connellsville Coke Regions: Their Past, Present and Future," The [Connellsville, PA] Weekly Courier, May 1914, 10.

Subsequent to these analyses, the nation's largest steel producers, including Federal Steel, American Steel and Wire, and Carnegie Steel, began buying and developing huge chunks of the Lower Connellsville coal field, dramatically inflating real estate prices. This scramble for coal lands was reflected in the increase of land values from $170-300 per acre in 1899 to $1700-2000 per acre in 1906.[14] Although not beginning until 1899, coke production in the Klondike mushroomed from 385,000 tons or just 4 percent of the Connellsville region's output in its first year to 3,800,000 tons or 30 percent six years later.[15] By 1914 the 9' Pittsburgh coal seam of the Klondike was being exploited by 17,000 coke ovens at 88 plants and was only slightly less important than the older field.[16]

Origins of the Monongahela Railway

In both the Connellsville and the Lower Connellsville regions, the organization and construction of railroad systems was central to the development of the local coal and coke industries. By the mid-1880s, as coke production in the Connellsville field was growing exponentially, the Pennsylvania, the Baltimore and Ohio, and the Pittsburgh and Lake Erie railroads had each built lines into the region. Coke producers were quick to take advantage of this network as dozens of plants were constructed along the new roads.[17] As interest in the Klondike field grew in the late 1890s, these same railroads looked to expand their systems into the new field.[18]

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[14]Boileau, Coal Fields, 41-42, 57.

[15]Enman, "Population Agglomerations," 185.

[16]Ibid., 189-90.

[17]Fredric L. Quivic, draft of a forthcoming HABS/HAER report on the Connellsville Coke Region, Part B, 5.

[18]One of the most prominent coke operators in the Connellsville field during the 1880s, Colonel James M. Schoonmaker, was a leading figure in railroad organization in the Klondike region in his capacity as vice president of the Pittsburgh and Lake Erie Railroad (P&LE). In 1884 Colonel Schoonmaker owned and operated 780 coke ovens in the Connellsville area. In that year he participated with Henry Clay Frick and two other individuals in a producers' pool which controlled over half of the region's ovens and became known as the "Coke Syndicate." "The Connellsville Coke Regions: Their Past, Present and Future," The [Connellsville, PA] Weekly

Prior to the development of the coking industry in the Klondike region, economic activity in the area was similar to that in other parts of southwestern Pennsylvania. The inhabitants were primarily farmers and artisans who catered to needs of both local residents and travelers using the east-west transit routes that crossed the region.[19] An incipient iron industry which had emerged in the first half of the nineteenth century had long since faded as the availability of rich ores from the Great Lakes and the adoption of coke as a furnace fuel had pushed Pittsburgh to the forefront of iron and steel production after the Civil War. As such, no significant railroad construction had been initiated in the Klondike region before 1899.

With accelerating interest in the coke-making prospects of the region, however, both the Pennsylvania Railroad (PRR) and the Pittsburgh and Lake Erie Railroad (P&LE), representing the Vanderbilts' New York Central interests, made plans to expand their lines into the area. Indeed, by 1900, the PRR had already expended $519,676 in the construction of rail lines from Brownsville Junction to Brownsville (1.10 miles) and from Adah Run to Cats Run (5.80 miles), and branches at Middle Run (2.97 miles), Cats Run (1.19 miles), and Moser Run (3.39 miles). The railroad had also secured the right of way for a main line along the east bank of the Monongahela River from Brownsville to Adah Run (19 miles).[20]

Having determined, however, that "...the trade and travel of the public could be better served by one line of railroad than by a duplication of lines," and that parallel systems offered the prospect of rate-diminishing competition, the PRR and the P&LE formed the Monongahela Railroad Company (MRC) as a joint venture.

Courier, May 1914, 6.

[19]Enman, "Population Agglomerations," 4.

[20]The Brownsville Junction to Brownsville line, the Adah Run to Cats Run line, the Cats Run Branch, and the Middle Run Branch had been constructed prior to 1900 by the Pittsburgh, Virginia and Charleston Railroad, while the Moser Run Branch had been constructed prior to 1900 by the South-West Pennsylvania Railway Company. Both of these companies were subsidiaries of the Pennsylvania Railroad. The Pennsylvania Railroad Company: Corporate, Financial and Construction History of the Lines Owned, Operated and Controlled to December 31, 1945, Vol. IV (Coverdale & Colpits, Consulting Engineers, 1946), 295. (Hereafter cited as PRR History)

The articles of association, dated December 24, 1900, specified the construction of the railroad as follows:

> ...from a point about one-third of a mile north of the existing Redstone Bridge crossing said (Monongahela) river, thence southward along the east bank of the Monongahela River to the dividing line between the states of Pennsylvania and West Virginia...[21]

An operating agreement between the owning railroads, dated November 22, 1901, established that the Monongahela Railroad would construct, operate, and manage the rail lines planned or then in operation between Brownsville Junction and the West Virginia state line. In forming this new organization, the PRR agreed to cede to the Monongahela Railroad the roads which its subsidiaries had previously constructed.[22]

The PRR and the P&LE also agreed that the Monongahela Railroad would operate as an autonomous organization, constructing its own road and facilities and incorporating the necessary administrative capabilities.

> ...when the said The Monongahela Railroad Company completes its railroad, it shall be operated, together with said branches, by its own management for the interests of the parties hereto, each party hereto to nominate one-half of the Board of Directors, and the President...to be selected annually by agreement between the Presidents of the Pittsburgh and Lake Erie Railroad Company and The Pennsylvania Railroad Company..."[23]

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[21]S.H. Church and Andrew Cunningham, Corporate History of the Monongahela Railway Company (Baltimore: The Lord Baltimore Press, 1927), 883.

[22]Samuel Rea, Fourth Vice President, Pennsylvania Railroad Company, to Albert Hewson, Secretary, Branch Roads, Pennsylvania Railroad Company, 21 December 1900, Monongahela Railway Company archives, Brownsville, PA.

[23]Agreement between the Pittsburgh and Lake Erie Railroad Company and the Pennsylvania Railway Company for the management of the Monongahela Railroad Company, 22 November 1901,

By this arrangement the executive control of the MRC was retained by the parent railroads while all day-to-day operations devolved to the local administration and managers.[24]

Once formed, the Monongahela Railroad Company began construction of its main line from Brownsville southward along the east bank of the Monongahela River toward the Pennsylvania-West Virginia border. When originally planned, the road was to extend to the state line where it would connect with the Fairmont, Morgantown and Pittsburgh Railroad (a subsidiary of the Baltimore and Ohio Railroad) at or near Point Marion, Pennsylvania.[25] As laid out in 1901-02, however, the road reached only to Martin, Pennsylvania, several miles shy of the border. Construction of this portion of the mainline began immediately after contracts were awarded in 1902 and was completed in August, 1903, thus opening mainline service to coal and coke operations in the western portion of the Klondike region.[26]

In order to service the inland portions of the new field, a series of rail lines were constructed for operation by the Monongahela Railroad along the eastern edge of the Klondike region between 1899 and 1905. These roads connected with the company's main line at Brownsville in the north and at Huron in the south, forming a loop into the region's interior. The first road constructed was the Masontown and New Salem Railroad, which was completed in 1902 and ran from the end of the Moser Run Branch northward to Fairbank, Pennsylvania. Connecting with this line at Fairbank was the Connellsville Central Railroad which extended to Brownsville by June of 1905. These two lines were consolidated as the Connellsville and Monongahela Railway Company in 1905 and, along with their numerous branches, were operated

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Pennsylvania Railroad Records, Pennsylvania State University Labor Archives, State College, PA.

[24]In 1927, when the Baltimore and Ohio Railroad Company became an equal partner in the Monongahela Railway with the original partners, this agreement was altered to provide for tripartite appointment of directors and presidency.

[25]Vice President's report to the Board of Directors, 3 January 1901, Monongahela Railway Company archives.

[26]Construction contracts for the initial portions of the mainline were awarded to Kennedy Crossan (sections A, B, and 1 through 11) and D.F. Keenan (sections 12 through 19), both of Philadelphia. Board of Directors Meeting Minutes, 13 October 1902, Monongahela Railway Company archives.

under a lease agreement by the Monongahela Railroad after that date. In later years this eastern branch of the MRC became known as the Dunlap Creek Branch.

While the completion of the Monongahela Railroad's main lines and branches in the Klondike by 1910 extended rail service throughout the region, it did not fulfill the strategic intentions of its owners. Company records indicate that the long term intentions of the PRR and the P&LE were for the Monongahela Railroad to serve the transportation needs of the entire southwestern portion of the Pittsburgh coal field. This area included not only the Klondike region but western Greene and southwestern Washington counties in Pennsylvania, and adjacent portions of northern West Virginia. With this strategy in mind, the PRR and the P&LE had acquired the capital stock of the Buckhannon and Northern Railroad Company in 1906.[27] This company had been incorporated by Baltimore-based investors in 1902 for the purpose of building a road southward from Fairmont, West Virginia to Buckhannon, West Virginia. After the expenditure of $836,777 for right of way and initial construction of this road, however, work had been suspended in December, 1903 due to financial difficulties. This delay presented the managers of the PRR and the P&LE with an opportunity to complete the southward extension of the Monongahela Railroad into the coal fields of northern West Virginia. Upon their purchase of the Buckhannon and Northern, the PRR and P&LE immediately abandoned the B&N's original project and turned the focus of the company's construction northward from Fairmont toward the lines of the Monongahela Railroad.

Beginning in early 1910, representatives of the Buckhannon and Northern began securing options on land for a new road from Rivesville, West Virginia northward to the state border.[28] There, a connection would be made with the Monongahela Railroad, which was to be extended from Martin, Pennsylvania southward along the

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[27]In September, 1905, the Pittsburgh & Lake Erie Railroad Company purchased from a group of investors from Baltimore, MD and Fairmont, WV the assets of the Little Kanawha Syndicate. The P&LE then sold, under an agreement dated February 26, 1906, a quarter interest each in this purchase to the Pennsylvania Railroad and the Baltimore and Ohio Railroad. The B&O sold its interest in properties north of Fairmont, WV to the PRR in 1913, making the PRR and the P&LE equal partners. President's office file 110.3, Monongahela Railway Company archives.

[28]Board of Directors meeting minutes, Buckhannon and Northern Railroad Company, 17 November 1910.

river to the state line by 1915.[29] The road southward from the state line to Rivesville was completed in 1912 with the expectation that traffic would then continue to Fairmont via the lines of the B&O. Heavy traffic and inadequate facilities on the B&O, however, prevented the profitable use of this Fairmont connection and forced the Buckhannon and Northern to construct a new road from Rivesville through Prickett Creek Junction to Fairmont. This line was authorized by the Board of Directors on May 22, 1913 and opened just in time for the official consolidation of the Monongahela Railroad and the Buckhannon and Northern.

On July 1, 1915 the strategic intentions of the PRR and P&LE were realized with the merging of the Buckhannon and Northern and the Monongahela Railroad into the Monongahela Railway Company. With this consolidation, the main line of the railway stretched from Brownsville, Pennsylvania to Fairmont, West Virginia, a distance of some seventy miles. Thus situated along the banks of the broad and muddy Monongahela River, the railway spanned the eastern end of the Pittsburgh coal field and placed the company in an excellent position to service the rapidly expanding coal and coke industry of the region.

Following the completion of the Monongahela Railway's main lines by the end of 1915, the company's focus was turned toward the untapped coal fields lying to the west of the Monongahela River. In order to penetrate this developing region, the Scotts Run Railway Company was formed in May of 1923 by the owners of the Monongahela Railway in order to hold the properties of the failed Morgantown and Wheeling Railway Company. These properties were purchased in foreclosure sale by the Scotts Run Railway on July 6, 1923 and leased for operation to the Monongahela by a contract dated the next day. Of primary interest to the Monongahela was the Morgantown and Wheeling's recently completed road, which ran from the Monongahela River at Randall, West Virginia northwest to Brave, Pennsylvania. Control of this road gave the company access to a large, relatively undeveloped section of northern West Virginia that was rich in coal deposits.

At the northern end of the Monongahela Railway system, access to the fields lying west of the river was acquired in 1926 when the MRC gained control of the lines of the Chartiers Southern Railway. This railroad had been organized by the PRR in December of 1906 in order to extend that company's network into

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[29]The extension of the Monongahela Railroad's main line southward from Martin reached the state line on November 2, 1914 after the construction of a bridge over the Monongahela River just south of New Geneva, PA. Church, Corporate History, 885.

the coal fields of Pennsylvania's Greene and Washington counties. In 1913, however, the PRR sold to the P&LE and the B&O one-third interests in those lines of the Chartiers Southern which lay south of Eighty-Four, Pennsylvania.[30] While the Chartiers Southern constructed roads between 1917 and 1920 from the PRR connection at Besco to Mather, Pennsylvania and from the existing PRR line at Crucible southward along the west bank of the Monongahela River to Nemacolin, it was apparent that the operations of the Chartiers Southern fell within the agreed upon domain of the Monongahela Railway. In the mid-1920s, the parent companies moved to fold these southern-most operations of the Chartiers Southern Railway into the Monongahela system.

The acquisition of the Chartiers Southern's lines by the Monongahela was accomplished in an elaborate agreement reached on December 31, 1926. Under this agreement, the Baltimore and Ohio Railroad became an equal partner with the PRR and the P&LE in the Monongahela Railway venture as both of the original partners sold one-sixth of their holdings in the company to the B&O. Additionally, the Pennsylvania agreed to lease to the Chartiers Southern its lines from Millsboro, Pennsylvania to Besco and Crucible, thereby completing the Chartiers Southern's V-shaped system which reached south and west into Greene County from Millsboro. The PRR also granted to the Monongahela trackage rights over its lines running from the Monongahela's Brownsville Junction along the west bank of the river to Millsboro. This allowed the connection of the Monongahela's lines on the eastern bank of the river with the expanding Chartiers Southern system in the western fields. Finally, the agreement transferred ownership of all outstanding Chartiers Southern capital stock to the Monongahela Railway and assigned the operation of the former company's railroad to the MRC in perpetuity.[31] This sweeping agreement augmented the northern portion of the Monongahela Railway system by grafting a 31.54 mile road to the northern terminus of its main line. This was supplemented before January 1, 1930 with the completion of an unfinished line from Mather to Waynesburg, Pennsylvania which the Monongahela had inherited from the Chartiers Southern.

The 1926 agreement also substantially expanded the southern end of the Monongahela's road network by transferring to the MRC the operation of short but strategically positioned B&O lines in northern West Virginia. Under the terms of the agreement, the

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[30]Thomas Townsend Taber, III, Railroads of Pennsylvania: Encyclopedia and Atlas (privately published, 1987), 347, and PRR History, 298.

[31]Board of Directors meeting minutes, 8 July 1926, 5.

B&O granted trackage rights over 0.75 mile of its Paw Paw Branch at Catawba Junction, West Virginia and leased 4.35 miles of that branch, from Grant Town, West Virginia to Catawba Junction, to the MRC. The B&O also leased to the Monongahela 1.36 miles of its Catawba Branch, from Catawba Jct. to Hite, West Virginia, and the Indian Creek and Northern Railway, a 2.6 mile line which had been built by the New England Fuel and Transportation Company from Blacksville to Arnettsville, West Virginia. As with the lines added at the northern end of the Monongahela's system, these lines greatly extended the company's penetration of the coal fields lying to the west of the Monongahela River.

Yard and Shop Facilities

In the thirty years following its formation in 1900, the Monongahela Railway had grown into one of the nation's largest coal carrying railroads. Its lines by that date covered much of the eastern portion of the Pittsburgh coal bed and its daily operations required the services of 69 locomotives.[32] While its total main track mileage had more than tripled between 1905 and 1930, Chart 2 indicates that the value of its assets, in current dollars, had increased by almost ten-fold. This dramatic growth reflected the investment by the Monongahela in not just rail lines and a fleet of locomotives but in extensive yard and shop facilities which supported its operations. These facilities were concentrated at the Monongahela's three principle termini: South Brownsville,Pennsylvania, Osage, West Virginia, and Fairmont, West Virginia. While the shops at Fairmont and Osage included small repair and maintenance facilities, the yard and shops at South Brownsville were by far the most comprehensive.

The original yard and shops of the Monongahela Railroad were a simple arrangement of facilities constructed according to a plan approved by the company's board of directors on July 2, 1903. These facilities, constructed between 1903 and 1906 at South Brownsville, Pennsylvania, stood between the Monongahela's main trackage and the Monongahela River, and included an ash pit and engine house, a car shop, a blacksmith's shop, a sand house,

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[32]Monongahela Railway Company Annual Report, 1930.

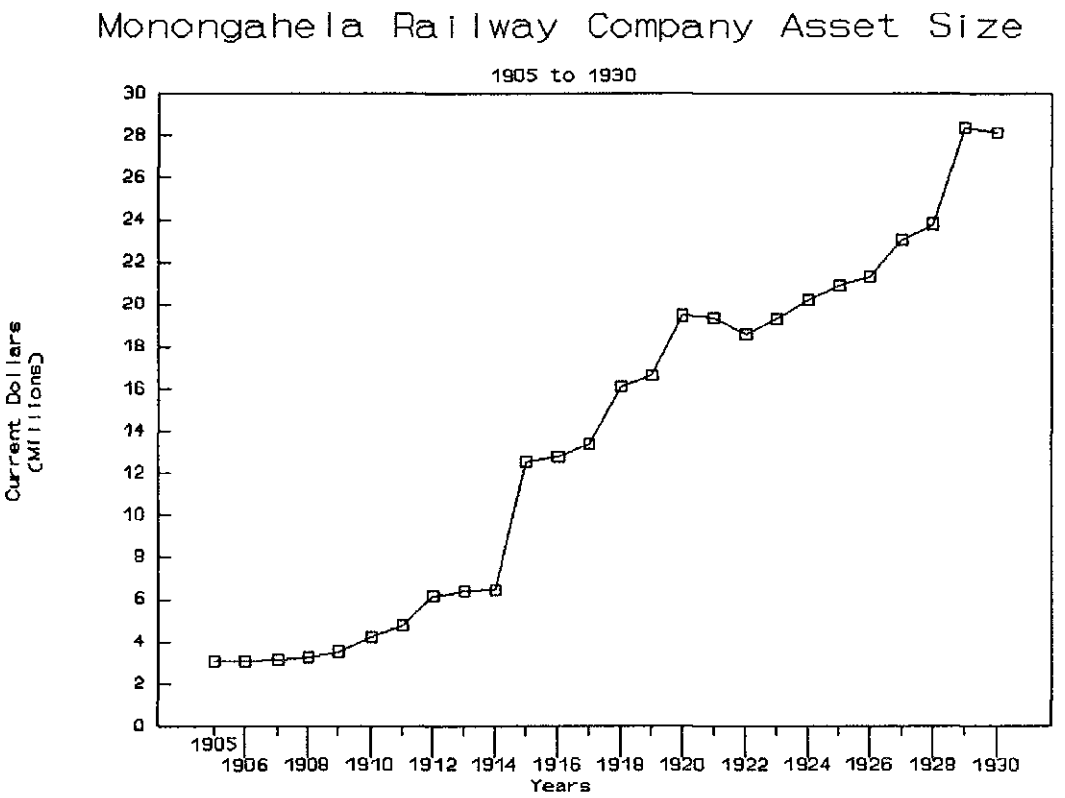

Chart 2

several water stations, and an assortment of small sheds.[33] The

[33]At the time of the railroad's founding the area in which the shops were located was known as Bridgeport. The name of the Bridgeport yard and shops was changed by the railroad as of June 12, 1908 to "South Brownsville" in response to a change of the borough's official name. Board of Directors meeting minutes, June 24, 1908, Monongahela Railway Company archives; Board of Directors meeting minutes, July 2, 1903, Monongahela Railway Company archives, and technical drawing of Bridgeport Yard, March

purpose of these shops was to service, maintain, and conduct minor repairs on the Monongahela's fleet of coal burning steam locomotives.

Although entirely absent from modern railways, the steam powered locomotive served as the central source of motive power for the nation's railroads through the first half of the

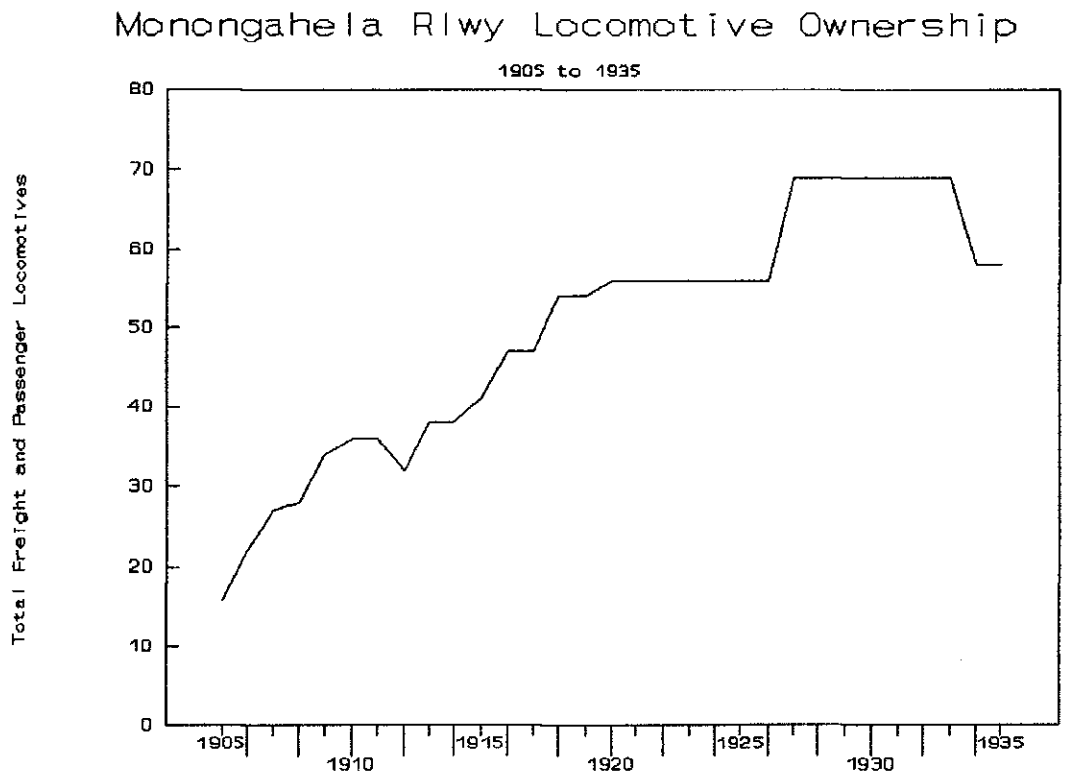

Chart 3

6, 1906, Monongahela Railway Company archives.

twentieth century. When it began operations in 1903 the Monongahela Railroad owned twelve such locomotives, which it had acquired second-hand from its parent roads.[34] Chart 3 indicates the rapid growth in the number of locomotives owned by the company between 1905 and 1935, evidence of its multiplied requirements for maintenance and repair facilities.

Steam locomotives were extremely complicated and temperamental sources of motive power, requiring almost continuous care and attention. Once a month each engine's boiler had to be washed clean of all the scale and mud that it had accumulated, the flues of the boiler and smoke box cleaned of soot, and the grates and brick arch of the fire chamber inspected and repaired. Minor "running repairs" were performed on an ongoing basis while every three years the steam locomotive had to be given a complete overhaul.[35] During such general overhauls it was necessary to dismantle the engine, inspect all components, and repair or replace them as necessary. This included removing the asbestos lining from around the boiler, removing and replacing the boiler flue pipes, and re-applying a jacket of asbestos around the boiler.[36] Such operations for a railroad of the Monongahela's size required large numbers of skilled craftsmen as well as unskilled laborers. They also required an array of specialized facilities.

One such facility was the engine house, the building in which minor repairs, boiler maintenance, and wheel work was performed on steam locomotives. The original engine house constructed by the Monongahela at South Brownsville was a simple one-bay shed into which locomotives could be driven for repair. However, it quickly became apparent that this would be inadequate given the railroad's scale of operations. Plans were therefore drawn in 1906 for the construction of a turntable and ten-stall circular engine house. This roundhouse was to be located on property adjacent to the Monongahela's yard that was then owned by the Brownsville Water Company. It was discovered, however, that construction would not be possible without a re-arrangement

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[34]The PRR and the P&LE had each provided the Monongahela Railroad with six used locomotives. Eight of these had been built in 1892-93 and four had been built in 1900. President's office file 110.3, Monongahela Railway Company archives.

[35]Thurman W. Van Metre and Russel Gordon Van Metre, Trains, Tracks and Travel (New York: Simmons-Boardman Publishing Corporation, 1956), 429.

[36]Ibid. and Ellis Porter, interviewed by author, 30 July 1992.

of water mains, which the company considered economically impractical. As a result, plans for the new roundhouse were abandoned and the pressing need for repair facilities was temporarily met with the addition of a second stall to the existing single-stall engine house at an estimated cost of $5,600.[37]

Within a few years, however, the inadequacy of the two-stall engine house forced the Monongahela's management to address the problem of the water mains. The company's 1909 annual report states that,

> To procure property upon which to erect a turntable and other terminal facilities, the railroad entered into an agreement December 27, 1909, with the Brownsville Water Company, for an exchange of property in the vicinity of Seventeenth Street, South Brownsville.[38]

Once the property constraints had been overcome, construction of the roundhouse proceeded quickly and the new facility was in operation by the end of 1910.[39]

The design of the roundhouse at South Brownsville typified the design of engine house facilities constructed in American rail yards during this period. The shop and turntable were located at the extreme end of the yard and approached by several tracks. After taking on coal, sand, and water in the yard, locomotives would proceed onto the turntable were they would usually be reversed before entering one of the stalls of the roundhouse. Each stall in the roundhouse was equipped with a "smokejack" through which the clouds of smoke produced by the coal burning locomotive could escape. These smokejacks were much like large, inverted funnels which conducted the smoke from the engine's stack through the roof of the building into the

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[37]Monongahela Railway Company archives, Joseph Wood, President of the Monongahela Railroad, to the Board of Directors, 2 July 1906, Monongahela Railway Company archives.

[38]Monongahela Railway Company Annual Report, 1909, 8.

[39]The Monongahela Railway's 1910 annual report, written on April 6, 1911, indicates that "A new ten-stall concrete enginehouse, and turntable were constructed at South Brownsville, and are now in use." Monongahela Railway Company Annual Report, 1910, 7.

atmosphere.

The stalls of the roundhouse were also designed to include either engine pits or drop tables, depending on their intended use. At the South Brownsville shop, eight of the stalls contained engine pits while two contained drop tables. Engine pits were long, narrow pits located between the rails which enabled the men to get under the locomotives in order to perform inspections and repairs. These pits were constructed of concrete and had convex floors so as to drain fluids to the sides. The drop tables were specially designed facilities used to drop the wheel trucks from under locomotives when wheel repairs had to be performed. They were deeper than the engine pits and were equipped with an elevator, the platform of which became a section of the track over the pit when raised. By spotting the truck of the locomotive over the drop table and placing jacks to prop up the main body of the engine, the drop table could be lowered so as to drop the truck into the pit. The South Brownsville roundhouse's drop pits were 4'-6" deep and had narrow gauge rails at the bottom which ran transverse to the stall tracks and would be used to move the truck to the side for repairs.[40]

Surrounded by and concentric with the position of the roundhouse was a turntable used to position locomotives for either removal from or entry to the roundhouse stalls. Still extant, the turntable is a long platform which supports a single track. This platform sits in a circular pit and pivots at its center, turning on wheels which run along a track that has been laid along the bottom of the pit. The turntable was used to receive locomotives from one of several yard tracks, reverse the locomotive if necessary, and align the engine with the tracks of the desired stall. The locomotive would then be driven or pulled into the stall for repairs or other attention.

The earliest turntable built at the South Brownsville yard was a 75' unit constructed concurrently with the roundhouse by George Nichols and Brothers of Chicago in 1909-10.[41] This turntable was of a center-bearing design in which the entire load was carried by a central pivot and pedestal.[42] While the resistance to movement was low with this type of structure, the

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[40]Authorization for Expenditure 696, Monongahela Railway Company archives.

[41]Per a photograph of the original turntable under construction in the collection of Mr. Harold Richardson.

[42]Authorization for Expenditure 592, Monongahela Railway Company archives.

engine had to be "spotted" or balanced carefully so that the table would swing freely. As engines became heavier and longer, however, this type of design became obsolete.

With the purchase of a group of enormous Mikado-class locomotives in the early 1920s, it became clear that the original turntable would have to be replaced by a modern unit of end-bearing design. This type of turntable had both center and end bearings so as to distribute the weight of the load. This eliminated the need to "spot" the engine and allowed the table to handle longer and heavier locomotives. In September, 1924 Bethlehem Steel built and installed such a turntable at the South Brownsville yard.

Originally, the Monongahela's managers had recommended that the original 75' turntable be replaced with a 90' table since "the present 75' table is not of sufficient length to accommodate our Light Mikado locomotives."[43] They further proposed that the old 75' table be moved to and installed at the Maidsville, West Virginia assembly yard since there were at that time no facilities for turning engines at that location. The turning facilities nearest Maidsville were at Gray's Landing, Pennsylvania, sixteen miles to the north. This meant that engines had to be run backwards for this distance in order to turn them, a situation that was thought to be "unsatisfactory."[44] The cost of expanding the existing turntable pit, however, proved prohibitive and the company chose to install a new table of the smaller 75' variety. No mention is made in the records as to the resolution of the Maidsville turning problem.

Attendant to the new turntable was a dead engine hauler that was built onto the table.[45] This hauler was used to move dead engines in to and out of the roundhouse as necessary. Once a dead engine had been pushed onto the turntable from the yard by a locomotive and the turntable aligned with the desired roundhouse stall, a workman pulled the line from the hauler to the end of the stall, ran it through a pulley, then returned it to the locomotive and attached it to the engine's coupler. By engaging the turntable motor and thus activating the hauler, the locomotive was then pulled into the stall. The hauler could be used for all the roundhouse stalls but it was especially useful

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[43]1921 Budget for the Monongahela Railway, Board of Directors file B-152/46, Monongahela Railway Company archives.

[44]Ibid.

[45]Description of hauler operation is from Porter interview, 30 July 1992.

for those that did not align directly with the incoming yard tracks. The hauler was also used to pull the engines out of the stalls once repairs were completed.[46]

While minor repairs and wheel work could be performed in the engine house, heavy repairs and overhauls of locomotives had to be performed in an integrated machining and repair facility known as an erecting shop. The original yard facilities of the Monongahela Railway did not include such a shop since all overhauls and major repairs were performed for the company by its parent companies. By 1910, however, the scale of the company's operations had made this arrangement impractical and, with the construction of the new roundhouse, the original engine house was converted into an erecting shop. To support this facility, a blacksmiths' shop that was located immediately adjacent to the original engine house was converted into a small-scale machine shop. This proved serviceable until March 28, 1916 when a fire destroyed both the erecting and machine shops.

While causing considerable damage, this fire seems to have provided the Monongahela's managers with a much needed excuse to construct a larger, more adequately sized erecting and machine shop facility. In 1917 plans for an integrated erecting, machine, and car shop complex, to be built between the river and the roundhouse, were drawn and approved. This new complex included a large, six-bay erecting shop, an adjacent machine shop equipped with an array of machine tools, and a car shop for the repair of passenger cars and cabooses. The new erecting shop was also designed to employ an electric overhead crane of sufficient power to lift and move the new Mikado-class steam locomotives.

The design of the erecting shop was of the "transverse" variety, in which the tracks within the shop were laid out crosswise of the path of the travelling overhead crane.[47] In operations of this design, locomotives were driven or pushed into the shop from the rail yard via a track located at one extreme

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[46]The winch became expendable in the early 1980s when the Monongahela Railway purchased a trackmobile from the P&LE. This was a device that is capable of running on either tracks or over the ground and is used to move cars and dead engines as needed. Porter interview, 30 July 1992.

[47]The alternative design was known as the"straight-through" design in which tracks extended the length of the shop and as various repairs were completed the engine was pushed toward the end of the shop. When the overhaul was complete, therefore, the engine would leave the shop at the opposite end from that which it entered. Van Metre, Trains, Tracks and Travel, 432.

end of the building. Once positioned inside the building on that access track, the locomotive would be lifted by the overhead crane and moved to one of the parallel repair tracks, each of which was large enough to accommodate a single locomotive. The overhead crane could also be used to lift boilers off of locomotive frames or to move the massive components of the engines around the shop. To facilitate repair work, the bays of the erecting shop were also equipped with engine pits similar to those in the roundhouse.

The entry of the United States into World War I and the seizure of the nation's railroads by the Federal government between 1918 and 1920 prevented the Monongahela from constructing in entirety its planned erecting/machine shop complex. Instead, the project was divided into two phases with immediate needs being met by the construction of a two-stall erecting shop. This steel frame structure was completed on October 24, 1918 and included a Niles 120 ton, 65' span electric crane that was equipped with two 60-ton trolleys and a 10-ton auxiliary electric hoist.[48] While meeting the crisis in heavy repair capabilities, this plan forced the railroad to make do for several years with temporary machining facilities located in the two stalls of the roundhouse furthest from the erecting shop.

The extensive nature of erecting shop repairs and the unstandardized design of steam locomotives meant that a great deal of custom machining had to be performed in repair and fabrication of locomotive components. This made the integrated operation of a machine shop a necessity for the efficient operation of the erecting shop. The wide variety of both specialized and general purpose machine tools utilized in the Monongahela's shops is illustrated in Table 1, which lists the equipment contained in the company's machine shop at the time of the 1916 fire.

In 1924, following the conclusion of both Federal railroad control and the postwar economic recession, the Monongahela moved to complete the pre-war design of its erecting/machine shop complex. Construction initiated in that year expanded the six year old, two-bay erecting shop by adding four repair tracks, car and pattern shops, and an 8,520 square foot machine shop. In this new machine shop, workmen performed both repetitive tasks, such as the replacement of car wheels, and customized work of a job-shop nature. Work flows in the facility generally followed no standard pattern and were largely determined by the shop's machinists and other skilled workers who exercised a great deal

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[48]Authorization for Expenditure 99, Monongahela Railway Company archives.

Table 1
Monongahela Railway Company
Machine Shop Equipment, March 28, 1916

Equipment	Installed	Cost
84" Drive Wheel Lathe	October, 1915	$8605
Slotting Machine	June, 1909	3160
42" Lathe and Motor	May, 1910	2897
Planer	July, 1909	2415
Arc Welding Machine	November, 1915	1507
Air Compressor	February, 1906	1400
24" Lathe	February, 1906	1260
Grinding Machine	1914	1167
Bolt Cutter	1913	850
16" Lathe and Motor	May, 1910	825
Shaper	February, 1906	681
Crank Pin Press	May, 1910	595
Drill Press	September, 1906	483
Crank Pin Truing Machine	November, 1907	230
Drop Pit Lifting Machine	July, 1906	195
Emery Wheel	February, 1906	190
Air Receiver	February, 1906	70
Combined Hand Punch & Shear	February, 1907	47
Miscellaneous Tools		1100

Source: Monongahela Railway Company Records, President's office file 163.

of autonomy in employing both their expertise and the shop's machinery in accomplishing assigned tasks.[49]

As noted above, the replacement of worn car wheels was one of the few repetitive tasks performed in the machine shop, and the uncomplicated work flow used in this operation illustrates the limited usefulness of standardized work flows in the Monongahela's repair shops. In this procedure, worn wheels that had been removed from locomotives, revenue cars, and cabooses were placed, still attached to their axles, on the long track bay at the south end of the machine shop. Workmen operating a 400 ton wheel press then removed the wheels from their axles (called journals) and moved these worn pieces across the shop to the boring mill. There, a machinist re-bored the holes in the center of steel wheels or used the machine tool to cut holes in new

[49]Porter interview, 30 July 1992.

wheel blanks. From this work station, the wheels were transferred to the wheel lathe where a team of workmen turned the wheels in order to correct any imperfection in their flanges or shape. Once the new or used wheels had been conditioned on the lathe they were moved back to the wheel press for attachment to a journal.

The car and pattern shops included in the new shop complex were used to perform repairs and maintenance on the railroad's cabooses and passenger cars. Originally, the car shop at the South Brownsville yard was also used to construct cabooses, six having been built there in 1911 alone.[50] It does not appear, however, that this practice survived the dismantling of the old car shop in 1924. Since much of the work performed in the new car shop took the form of carpentry these areas primarily contained a variety of wood working equipment. The painting of cars was also performed in the car shop while any required metal shaping was performed in the adjacent machine shop.

Also associated with the Monongahela Railway's repair complex were several smaller shops such as the air brake, flue, and blacksmiths' shops. These performed specialized tasks associated with the repair and maintenance of the road's equipment. The air brake shop, located after June, 1929 in a corner of the new machine shop facility, was equipped to test, repair and overhaul all parts of air brake systems.[51] The flue shop, on the other hand, was used to repair and fabricate the innumerable steam, air, and water pipes that were incorporated in the design of steam locomotives.

It is important to note that, throughout its existence, the Monongahela Railway has never owned the revenue cars used to convey freight on its system. While owning its own locomotives, work cars and cabooses, the company relied on the main line roads with which it connected to provide empty rail cars. For a brief period in its earliest years it is probable that many of the Mon's largest coke producing customers owned their own cars in order to be assured a supply of empties when car supplies became tight. In 1907, however a federal circuit court found that private rolling stock had to be included in the car allotments made by the railroads among their various customers. This eliminated the advantage to large producers of owning their own rolling stock and, after this decision, most privately owned cars

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[50]Monongahela Railway Company Annual Report, 1911, 7.

[51]Authorization for Expenditure 784, Monongahela Railway Company archives.

were sold to the railroad companies.[52]

Other than the erecting shop and roundhouse, perhaps the most prominent structure in the South Brownsville yard was the company's coal and sanding station which stood in the midst of the rail yard after being completed on 22 September 1918.[53] Prior to the construction of this station the Monongahela had procured fuel coal from the tipple of the Henderson Coal Company's Umpire Mine at Brownsville Junction. In 1917, however, it appeared that the coal from this mine would be exhausted within a year and, due to the presence of a severe squeeze of the coal seam, mining operations would probably have to cease even sooner. Since there were no other mines in the district which could conveniently supply the railroad with engine coal, it became necessary to construct a coal dock and station in the South Brownsville yard.[54]

At the coaling station, locomotives were supplied with coal and sand, and the ashes from their boilers were removed.[55] Upon approaching the station, a steam locomotive was situated over one of the ash or cinder pits and the ashes were released into six-foot long steel buckets which rested on tracks at the bottom of the ash pits. These buckets had large knobs at each end and, when full, were grasped by a winch, hoisted to the top of the station structure, and dumped into an ash holding bin. Coal for the station was delivered in cars which were placed on an inclined track adjacent to the station. When coal was needed to replenish the station, one of these cars would be allowed to roll down the track to a position over a bin and trap doors on the car's bottom would be opened, thereby dumping the contents of the car. The coal would then be hoisted in large steel buckets to the top of the structure and emptied into a storage bin from which locomotives could be supplied.

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[52]"The Connellsville Coke Regions: Their Past, Present and Future," The [Connellsville, PA] Weekly Courier, May 1914, 49, and Quivic, draft of report on Connellsville Coke Region, Part B, 6.

[53]Authorization for Expenditure 147, Monongahela Railway Company archives.

[54]G.B. Obey, General Superintendent of the Monongahela Railway Company, to J.J. Turner, President, 24 April 1917, Monongahela Railway Company archives.

[55]Description of coal station operation taken from Porter interview, 30 July 1992. Mr. Porter was employed as operator of this facility from January 1952 to February 1953.

Sand for the locomotives was delivered in cars to the station and emptied into a hopper through which long steam pipes passed.[56] These pipes would dry the sand as it was loaded into the bin and allow the dried sand to be blown by a stream of air into a hopper at the top of the station. After a locomotive's ashes had been removed, the engine was pulled forward to the station's chutes where coal and sand would be supplied. Once replenished, the engines would move off to receive water and begin their assignments throughout the Monongahela's system.

Railway Work Force and the 1922 Shopmen's Strike

As the Monongahela Railway's repair and maintenance facilities expanded during this early period of growth and prosperity, its utilization of manpower grew apace. During its first thirty years of operations, the road's work force steadily expanded and, by the 1920s, consistently numbered well over one thousand. This work force included both skilled craftsmen, such as machinists, engineers, and electricians, as well as clerks, conductors, draftsmen, and a great number of unskilled yard, shop and road crew workers.

During these early years, many of the Monongahela's more highly skilled workers were members of labor organizations that were among the oldest and most powerful trade unions in the United States. In the nineteenth and early twentieth centuries, very few insurance companies were willing to offer policies to railway workers due to the hazardous nature of railroad employment. The fearful dangers of railroad employment were reflected in the appalling death and injury rates recorded by the Monongahela Railway during its first decades. In 1907, for example, company employees sustained eight fatal and fifty-three non-fatal injuries, with an average of 15.6 days lost per non-fatal injury reported.[57]

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[56]Sand was needed by the locomotives to improve traction in both the summer and winter. In situations where additional traction was needed, the locomotive engineer would release sand from a box onto the rails just ahead of the drive wheels. This provided additional friction and allowed the engine to achieve greater tractive force.

[57]This average of days lost appears, however, to understate the severity of the injuries sustained. For example, a man who had the middle and index fingers of his right hand crushed by a dropping rail frog missed only four days. Also, a 60 year old man who was struck on the head by a falling stone and sustained a fractured skull missed only seven days. Monongahela Railway

In response to both frightening injury rates and their inability to secure insurance policies, skilled railroad workers sought to protect themselves and their families from the financial consequences of injury or death by forming fraternal organizations. These brotherhoods, initially focused on providing death and injury benefits to members, soon evolved into formal craft unions and began to pursue a broader range of worker interests. Their ability to affect widespread improvement in conditions was consistently limited, however, by their fragmentation along craft lines and the near absence of organization among lesser skilled workers. As a result, despite the strength of the skilled brotherhoods among the "running trades," before 1918 only about 35 percent of railroad workers were organized.

This situation changed substantially with the seizure and operation of all American railroads by the Federal Government following a proclamation by President Woodrow Wilson on 26 December 1917. This move was prompted by manpower shortages and labor discontent which, multiplied by heightened wartime demands, threatened to paralyze the nation's vital rail network. The United States Railroad Administration (U.S.R.A.) was established to operate the railroads and, in order to secure industrial peace and efficient rail operations, gave free rein to union organizing activities. As a result, between 1917 and the end of Federal control in 1920, membership in such non-operating unions as the Brotherhood of Maintenance of Way Employees and the Brotherhood of Railway Carmen exploded. The maintenance of way organization, for example, grew from 30,000 members in 1917 to over 300,000.[58] Overall, the old running-trade brotherhoods raised their organization percentages from 80 percent to 90 percent while the newer, non-operational unions grew from approximately 30 to 80 percent representation.[59]

At the Monongahela Railway, management's exasperation with the mounting unionization of its work force was compounded by frustration over the amount of compensation allowed the company

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Company Annual Report, 1907, 10.

[58]Alexander Uhl, Trains and the Men Who Run Them (Washington, D.C.: The Public Affairs Institute, 1954), 48-49.

[59]Ibid., 49.

by the U.S.R.A. during the period of federal control.[60] The annual amount of this compensation for Federal control was established by the Interstate Commerce Commission in 1917 by calculating the average annual operating income of the Mon for the three years ending 30 June 1917. This calculation, however, greatly understated the earning capacity of the Monongahela because the first of these three years reflected operating results prior to the merger with the Buckhannon and Northern Railroad. This merger had resulted in the addition of nearly 50 percent to the Monongahela's track mileage in a region whose coal production was growing rapidly. In fact, forty new coal mines were opened along the former Buckhannon and Northern lines in the few years between late 1915 and October, 1919.[61]

In order to remedy this situation the Mon's managers appealed to the U.S.R.A. for redress of the compensation figures calculated by the I.C.C. They argued that a more equitable figure could be developed by using average annual operating income figures for the two years prior to 30 June 1917. This appeal, however, was denied by the Director General of the railroads, much to the consternation of the railroad. At the conclusion of World War I and with the impending end of Federal control of the railroads, Congress passed the Transportation Act of 1920 which, among other things, created a Railroad Labor Board (RLB). This body was a tripartite board comprised of nine members, three from management, three from labor, and three from government. The RLB was intended to investigate and equitably settle labor disputes in the railroad industry, but the assumption of power by the pro-business Harding administration in 1921 suggested that the government appointees to the RLB would favor industry. This gave railroad management, for whom a "Return to Normalcy" meant the reversal of appalling union membership gains, an opportunity to turn back the clock on wages and organization. The Monongahela, which had suffered under what its managers believed were grossly unfair compensation allowances, was especially eager to redress the wrongs of Federal control. Thus, with the establishment of the RLB, the industry and the Monongahela headed towards the railway's only lengthy labor confrontation, the Shopmen's Strike of 1922.

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[60]The discussion of the Monongahela Railway's compensation dispute with the United States Railroad Administration is derived from the Monongahela Railway Company archives, especially Board of Directors file B-152/40.

[61]J.J. Turner, President of the Monongahela Railway Company, to the Board of Directors, 28 October 1919, Monongahela Railway Company archives.

With the onset of postwar economic recession as justification, the rail carriers applied to the RLB for considerable wage reductions in both 1921 and 1922. These requests for reduction were approved by the board at the same time that several of the railroad unions, particularly the shop craftsmen, were vigorously decrying the railroads' growing practice of contracting-out. Under this practice, the railroads hired outside contractors to perform work which would normally have been performed by unionized railroad employees.[62] The coincidence of RLB's wage reduction approvals with its disregard for union out-sourcing complaints all but destroyed the legitimacy of the board among the workers and set an ugly tone for railroad labor relations.

Amid swelling worker dissatisfaction with the inequity of the RLB, the Railway Employees' Department of the American Federation of Labor, the shop craft workers' union, voted to reject the 1922 wage reduction and strike on 1 July 1922. With the considerable financial resources of the A.F.L. and the sympathy of their fellow railway workers, the shopmen were confident in their ability to conduct and win the confrontation. They were not aware, however, of the extensive preparations the railroads had made for the battle or the degree to which the Harding government was willing to support the carriers' interests.

For months the railroads had anticipated just such a showdown and had planned thoroughly for its eventuality. A carefully conceived strategy had been developed which utilized the employment of strikebreakers, the implementation of a secret information network, and the application of government power through court injunctions to defeat any labor strikes. When the shop workers of the Monongahela left their jobs at 10:00 a.m. on 1 July 1922, joining 400,000 of their brethren in the largest single walk-out in U.S. railroad history, they were immediately confronted by a corporate/government alliance of overwhelming strength.

The initial response of the Monongahela was to announce that all workers not reporting to work would be considered permanently out of the company's employ.

> It is regrettable that a considerable number of the employes of this company- not satisfied with a scale of wages established

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[62]Harry E. Jones, Railroad Wages and Labor Relations, 1900-1952 (New York: Bureau of Information of the Eastern Railways, 1953), 78.

> by a Government Tribunal have seen fit to withdraw from its service.
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> All those who left their work at 10:00 o'clock this morning, and all others who fail to report for duty at their established hour of service, today, July 1, 1922, will be considered permanently out of the service of this Company.[63]

Immediately, the Monongahela's managers were in close contact with the central coordinator of the carriers' strategy, John G. Walber, Executive Secretary of the Bureau of Information of the Eastern Railways. Walber had established a coded communications network which allowed the railroads to transmit information regarding their respective labor situations to a central clearing center via telegram. The following is a typical set of communications between the Monongahela and Walber's office:

> July 28, 1922- Walber to Monongahela
>
> BEHOLD TALISMAN QUICKLY DRUM NAKED AND LINK OF EPG SOAK VLPM WHO ARE PIKENT REAL UPE
> (Translation: Quickly approximate the number and percentage of new employees hired who are returned service men.)[64]
>
> July 29, 1922- Monongahela to Walber
>
> DEAF TWENTY EIGHTH GANG GIFT LINK GIFT GANE PICK REAL UPE
> (Translation: Per your message of the twenty-eighth, 23 men, 31 percent returned service men.)[65]

A daily coded message was also established between each of the railroads, on one hand, and the I.C.C. and other government agencies, on the other. To facilitate this communication, the I.C.C. established an fictional "Car Service Division," to which

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[63]Notice to employees of the Monongahela Railway Company, H.C. Nutt, President and General Manager, 1 July 1922, Monongahela Railway Company archives.

[64]President's office file 015, Monongahela Railway Company archives.

[65]President's office file 015, Monongahela Railway Company archives.

all coded correspondence from the carriers to the government was addressed. Daily reports to the Car Service Division included such information as the numbers of employees out of service in each department, their percentage to the total normal work force, the number of old employees returned, and the number of new men hired.[66]

In order to apply further pressure to the striking shopmen, the Monongahela also espoused the uniform policy of the railroads regarding the loss of seniority by the strikers. This position held that since the workers involved had chosen to resign their positions and were no longer railway employees, they had sacrificed their seniority positions. The Monongahela made clear its position on this issue with a notice to all employees on 2 August 1922 which stated

> Those men who left the service pursuant to the strike order, effective July 1, 1922, voluntarily relinquished their seniority rank, and their names have been striken (sic) from the roster. The seniority rank of employes who loyally remained in the service, and of new men, entering it, is permanently assured , and they will never be displaced in seniority by any man who joined the present strike."[67]

This loss of seniority was a cruel blow to the striking shop workers since it disrupted the traditional means by which they could mitigate the physical demands of their work as they grew older. It was customary for specific jobs in the shops to be assigned through a bidding system under which those with the most seniority had first choice of available assignments. This allowed the older shopmen to choose less physically demanding positions and thereby remain productive despite advancing age. The loss of seniority for such veterans promised to impose severe hardships by forcing them to accept the least desirable and most strenuous jobs.

The position taken by the carriers on the issue of

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[66]President's office file 013.1, Monongahela Railway Company archives.

[67]Notice issued by H.C. Nutt, President and General Manager of the Monongahela Railway Company, 2 August 1922, Monongahela Railway Company archives.

seniority, as well as several other issues, was validated by the RLB in a sweeping resolution handed down on 3 July 1922. If the bias of the RLB had not been clear before the strike, it became painfully obvious to the workers with the publication of this document. In addition to supporting the loss of seniority position, the RLB invited the carriers to employ strikebreakers, stating

> ...if it is assumed that the employees who leave the service of the carriers because of their dissatisfaction with any decisions of the Labor Board are within their rights in doing so, it must likewise be conceded that the men...who enter it anew are within their rights in accepting such employment, that they are not strike-breakers seeking to impose the arbitrary will of an employer on employees; that they have the moral as well as the legal right to engage in such service...and that they are entitled to the protection of every department and branch of the government...[68]

This invitation was taken up with relish among the carriers, many of whom had already arranged for the importation of workers to replace those shopmen who had "resigned their positions."

The July 3rd resolution of the RLB also validated another carefully conceived strategy that was employed by the railroads to circumvent the legitimate shopmen's organizations: the formation of company unions. The resolution specified that since the members of the striking unions were no longer employees of the railroads, those unions had ceased to be legitimate representatives of the industry's workers. As such, the board was willing to meet with any organizations which represented the industry's new work force. L.F. Loree, chairman of the eastern group of carriers, announced that the roads in his region, including the Monongahela, would form new unions among the replacement workers.[69]

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[68]Resolution passed by the U.S. Railroad Labor Board, 3 July 1922, Monongahela Railway Company archives.

[69]John G. Walber, Executive Secretary of the Bureau of Information of the Eastern Railways, circular letter to all bureau members, 27 July 1922, Monongahela Railway Company archives.

As the strike progressed it became clear that the goal of the carriers was not just to sustain the wage reductions awarded by the RLB but to break the shopmen's union. In this pursuit, the carriers refused to negotiate with the union once the strike began, reminiscent of Henry Clay Frick's strategy in breaking the steel workers' union at Homestead, Pennsylvania in 1892. Indeed, a letter from D.K. Orr, Superintendent of the Monongahela to the president of the shopmen's union, seems to echo Frick's pronouncements of thirty years earlier:

> This will acknowledge receipt of your letter of September 23, 1922...asking if you can arrange for a conference on behalf of the "Striking Employes" of the Monongahela Railway Company, who went out on strike July 1st, 1922: when the men formerly employed by the company left the service on July 1st, they ceased to be employes, and in accordance with the notification given in bulletins dated July 1st and August 2nd, 1922...none of those men will be re-employed by this company.
>
> I therefore, wish to advise that I am not in position to confer with you ar anyone else who purports to represent the men in question.[70]

In fact, just weeks before this letter was written, the defeat of the shopmen was assured by the deployment of the carriers' final but decisive tactic. On 1 September 1922 U.S. Attorney General Harry M. Daugherty secured the issuance of an injunction against the strikers which was one of the most sweeping ever written. In this order Judge Wilkerson of the Chicago District Court prohibited picketing, among other things, and forbid the union's leadership from issuing any statements or orders to union members encouraging them to leave their work or persuade others to do so.[71] This effectively ended the organized resistance of the unions and led to their immediate capitulation. As a result, instruments of surrender were concluded between the defeated shopmen and most of the nation's carriers over the next few months.

The Monongahela Railway, however, refused to accept even abject surrender from its shop workers. Instead, the company's managers refused to consider either direct negotiation with the

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[70]D.K. Orr, Superintendent of the Monongahela Railway Company, to W.P. Good, President, System Federation No. 90, 26 September 1922, Monongahela Railway Company archives.

[71]Uhl, Trains and the Men Who Run Them, 61-62.

defeated unions or mediation from leaders from the non-striking running trade brotherhoods. As of late March, 1923 the railroad had not reached an agreement with the striking shopmen and none of the men who had gone on strike had been re-hired by the company.[72] In December of that year, more than a year after the conflict had been settled by the preponderance of the nation's railways, the Monongahela was one of only twenty "hard-boiled" railroads that had refused to terminate the shopmen's strike. Finally, on 25 August 1924 a memorandum of agreement between the company and the U.S. Department of Labor established the conditions by which the strike would officially end on the Monongahela. These included

1. The Monongahela could re-employ such former employees as it saw fit, as vacancies occurred.

2. The principle of collective bargaining would be recognized with the workers.

3. The company could refuse employment to any persons who had been guilty of any overt act or law violation or had been found inefficient or insubordinate.

4. As vacancies occurred the company could choose to employ men formerly in its service or men not previously employed by it, as the company saw fit.

5. The seniority of all workers would be determined by the date of their latest employment, thus denying all strikers any seniority achieved before July 1, 1922.[73]

No union representative signed this agreement.

Thus, the only lengthy strike in the history of the Monongahela Railway ended in a complete victory for the company. Of the 158 employees listed on the shop employees' roster for June, 1922, only 51 had been returned to employment as of 24 August 1924, including those workers who were re-hired and subsequently left employment for various reasons. In the years

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[72]D.K. Orr, Superintendent of the Monongahela Railway Company, to E.J. McClees, Secretary of the Bureau of Information of the Eastern Railways, 26 March 1923, Monongahela Railway Company archives.

[73]Memorandum of agreement between the Monongahela Railway Company and the Commissioner of Conciliation, U.S. Department of Labor, 25 August 1924, Monongahela Railway Company archives.

following the strike the railroad carefully screened union sympathizers from its shop workforce, pursuing a policy by which any former employee applying for work was required to submit a complete service record and statement of his employment and activities since 1 July 1922. These records were then reviewed and personally approved by the Monongahela's president before the individual could be hired. Thus, the defeat of the union gave the company a degree of control over its work force that recalled the years prior to World War I.

This heightened control was timely for the Monongahela since by 1924, the company was entering the years of its greatest profitability. Strangely, however, the road's prosperity during the 1920s ran countercurrent to economic hardships being experienced in much of the region it served. In 1900 the Monongahela had been organized specifically to serve the needs of the flowering beehive coke industry of the Klondike region. By the 1920s, however, this industry was spiraling towards insignificance as the Monongahela Railway was carrying record tonnages. This seeming contradiction between the performance of the beehive coking industry and that of the railroad built to serve its needs can be explained by the emergence in the Pittsburgh region of by-product coke-making.

As discussed above, the impetus for the commercial development of the coal resources of the Klondike region around 1900 was the rapidly growing demand for metallurgical coke. The quality of local coals for such coking purposes surpassed that of nearly all other coals in the United States. Chemically, the coke produced from Lower Connellsville region coal was uniformly low in sulphur, phosphorus, and ash, and, physically, displayed the hardness of body, cell structure, and burden-bearing characteristics necessary for blast furnace use.[74] The expansion of the Monongahela's customer base during the company's early years illustrates the explosive growth of the region's industry as within three years of initiating operations in 1903 the road was serving 35 coal and coke operations.[75]

Coke production in the region served by the Monongahela Railway was performed almost exclusively in "beehive" or, later "rectangular" coke ovens.[76] These ovens were constructed of fire

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[74]Boileau, Coal Fields, 77.

[75]President's office file 161, Monongahela Railway Company archives.

[76]The following description of beehive coke making is taken from Enman, "Population Agglomerations," 85-95.

brick with an opening in the front, the "door," and a circular opening at the top, the "trunnel hole." Ovens of either type were always constructed in long rows built adjacent to the mines which supplied them with coal. During operation, coal was loaded into the ovens through the trunnel hole from larry cars which ran on tracks along the tops of the ovens. After the coal had been baked and the resulting coke quenched with water, it was drawn from the oven through the door, either manually or mechanically, and loaded into rail cars.

During this process, all of the impurities baked out of the coal were allowed to escape into the atmosphere through the trunnel hole. This created massive pollution problems in the areas immediately surrounding the coke plants as clouds of noxious fumes were continuously expelled from the ovens. In 1907 one industry observer commented that of the 16 million tons of coal consumed in coke production in 1899 in the Connellsville region

> ...5,000,000 tons of this amount [was] thrown into the atmosphere in the shape of volatile matter, which in turn contains many valuable by-products, such as ammonia, tar gas, heavy and light oil, benzol, toluol, xylol, phenol, naphtha, anthracene, creosote, pyridine, pitch, etc. Of ammonia alone not less that 50,000 tons were thrown into the atmosphere during the year 1899 by coke ovens of the Connellsville region...[77]

Interestingly, the author was quite optimistic concerning the environmental impact of this toxic deluge, commenting that these chemicals "...no doubt add(ed) materially to the fertility of our land; for nature never wastes anything, and it is in all probability precipitated."[78]

While nature may not waste anything, the beehive coking process certainly did. The impurities released from the baking coal, which were once virtually valueless, by the early twentieth century were in growing demand by the burgeoning American chemical industry. As a result, U.S. steel producers began gradually to utilize a technology, developed in Europe, that both allowed the waste products to be captured for sale and permitted the coking of inferior grades of coal. This process, known as

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[77]Boileau, Coal Fields, 56.

[78]Ibid.

the by-product coke-making process, employed retort ovens arranged in large, complex industrial plants. These plants captured the waste products of the coking process, refined them using sophisticated chemical distillation equipment, and separated the products for sale and shipment.

Aside from the capture of valuable chemical by-products, the new technology had several other advantages over the beehive coke-making process. First, the yield of coke per ton of coal is greater in by-product processing. A ton of Connellsville coal that was coked in a beehive oven would yield, on average, about .67 tons of coke. In 1924, a ton of Pittsburgh seam coal coked in a by-product oven would yield about .72 tons of coke.[79] This seemingly small percentage difference was crucial in an industry where many millions of tons of coke were produced annually. A second advantage of by-product coke was its superior purity. By eliminating greater proportions of ash, phosphorus, and sulphur content from coal, the new technology made it possible to produce metallurgical grade coke from coals once considered unusable for such purposes. As such, the vast tracts of coal from mines in western Greene County, Pennsylvania and northern West Virginia became attractive for coke-making purposes. Finally, one of the primary by-products from the coking process, coke oven gas was immediately useful at the steel mills for combustion in their myriad furnaces. For this reason, virtually all of the new by-product facilities were built adjacent to the blast furnace complexes situated along the lower Monongahela River.[80] Such central locations, well outside the limits of the old Connellsville and Klondike coke regions, also provided the easiest access to the chemical markets of the heavily industrialized Pittsburgh region.[81]

While the first by-product plants were built near the turn of the century, large-scale development of the new technology did not occur in the United States until the onset of World War I led to meteoric growth in the domestic chemicals industry. By the end of the war, the fortunes of the coking industry in the Klondike region had taken a dramatic turn for the worse as most of the leading steel producers had built by-product coke-making facilities outside the region. Between 1910 and 1924, the number of such plants in western Pennsylvania doubled while their consumption of coal increased fivefold. These plants included the world's largest by-product complex, built just downriver from

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[79]Enman, "Population Agglomerations," 312.

[80]Ibid., 7.

[81]Ibid., 307.

the Klondike region at Clairton, Pennsylvania by U.S. Steel. This facility was designed to be the central coking operation for the steel trust's vast coal holdings south of Pittsburgh. Indeed, as John Enman comments, by 1920 the coking industry had been transformed.[82]

The consequences of this technological transformation for

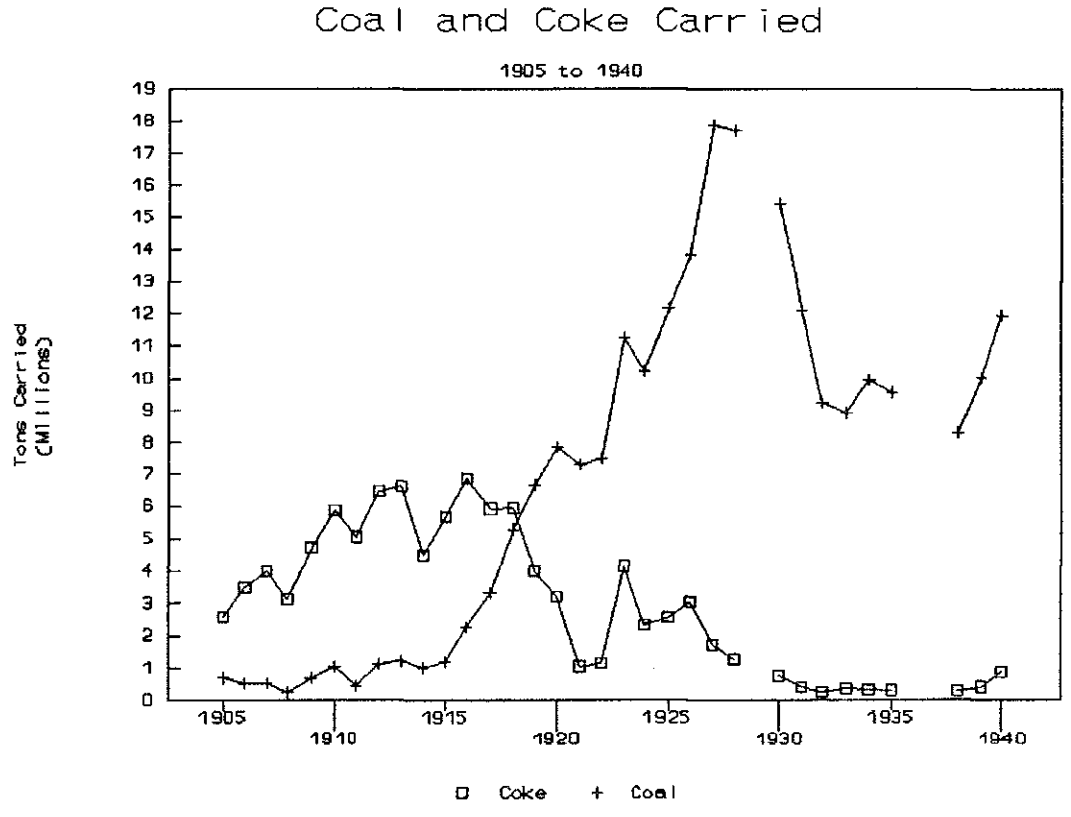

Chart 4

[82]Ibid., 304.

the beehive coke works of the Klondike region were severe. Within less than a decade these operations slipped from indispensability to marginality, useful only in periods of heavy coke demand. Chart 4 illustrates the decline of coke making in the region by showing the rapid evaporation of coke tonnage carried by the Monongahela. From the peak year of 1916, in which the road carried over 6.8 million tons, the amount of coke hauled fell to just over 1 million tons in 1921. For the railway, however, there was a silver lining in the eclipse of beehive coke making.

As Chart 4 indicates, the years of contraction in coke hauling coincided with the multiplication of coal tonnages handled by the Monongahela Railway. In fact, the decline of coke making in the Klondike was a boon for the Monongahela Railway for several reasons. First, the exporting of raw coal from the region, rather than refined coke, necessarily meant an increase in the tonnage carried by the road. Since coal lost about one-third of its weight in coking, the transportation of coal by the Monongahela before coking took place meant higher traffic tonnages. Also, the landlocked situation of many of the region's mines and the underdeveloped state of river transportation confined much of the coal traffic to the railroad. Finally, the ability of the new by-product coke plants to utilize coals of inferior quality to those of the Klondike region allowed the development of vast Pittsburgh seam coal fields to the west of the Monongahela River in Greene County, Pennsylvania and northern West Virginia. These areas fell within the intended domain of the Monongahela, and their exploitation promised to multiply the railway's annual tonnage. As a result of these factors, the amount of coal carried by the railroad grew from just over 2.2 million tons in 1916 to over 11.2 million tons in 1923. This pushed the company into a period of unprecedented profitability.

As the Monongahela Railway's owners and managers looked to the future during the late 1920s, then, they must have felt great optimism. The period since 1900 had been one of almost continual growth and prosperity for the company. As Charts 5 and 6 indicate, the Monongahela showed steadily climbing net incomes and solid returns to investment through most of its first thirty years. The work force had been dealt a harsh blow in the 1922 Shopmen's Strike, while coal shipments were climbing to new records nearly every year.

By 1930 the Monongahela Railway had matured to fill the role its parents had intended for it. Its modern yard and shop facilities supported 177.9 miles of main trackage that stood astride the eastern portion of the great Pittsburgh coal field. With lengthy branches extending to both the east and west of the Monongahela River, its lines covered not only the Klondike coal

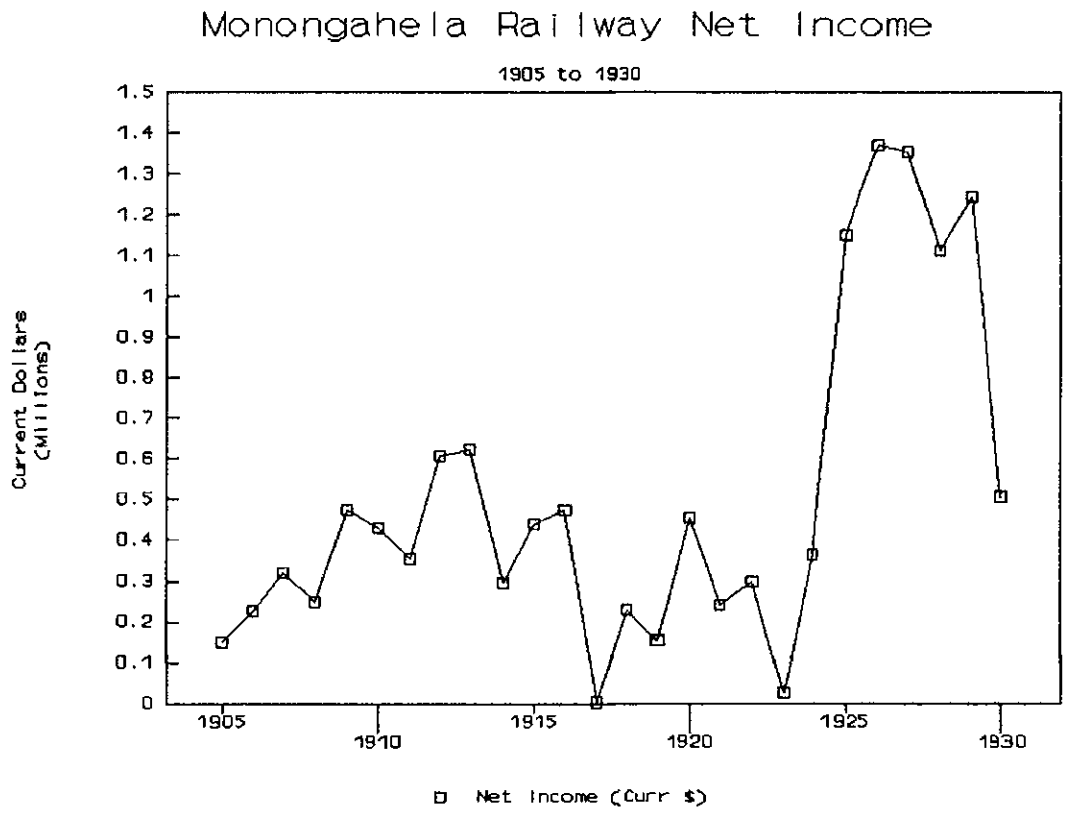

Chart 5

and coke region but the Pittsburgh coal fields of Greene County, Pennsylvania and northern West Virginia. Indeed the company's bright prospects were reflected by its new, five-story passenger station and office building, constructed in downtown Brownsville during 1928-29.[83] This sturdy, red brick structure with its stone

[83]The company's Union Station and office building, which opened on January 19, 1929, was erected by Cleveland architect B.R. Magee and builder H.K. Furguson on the same location as the original Monongahela Railway Company offices. Monongahela

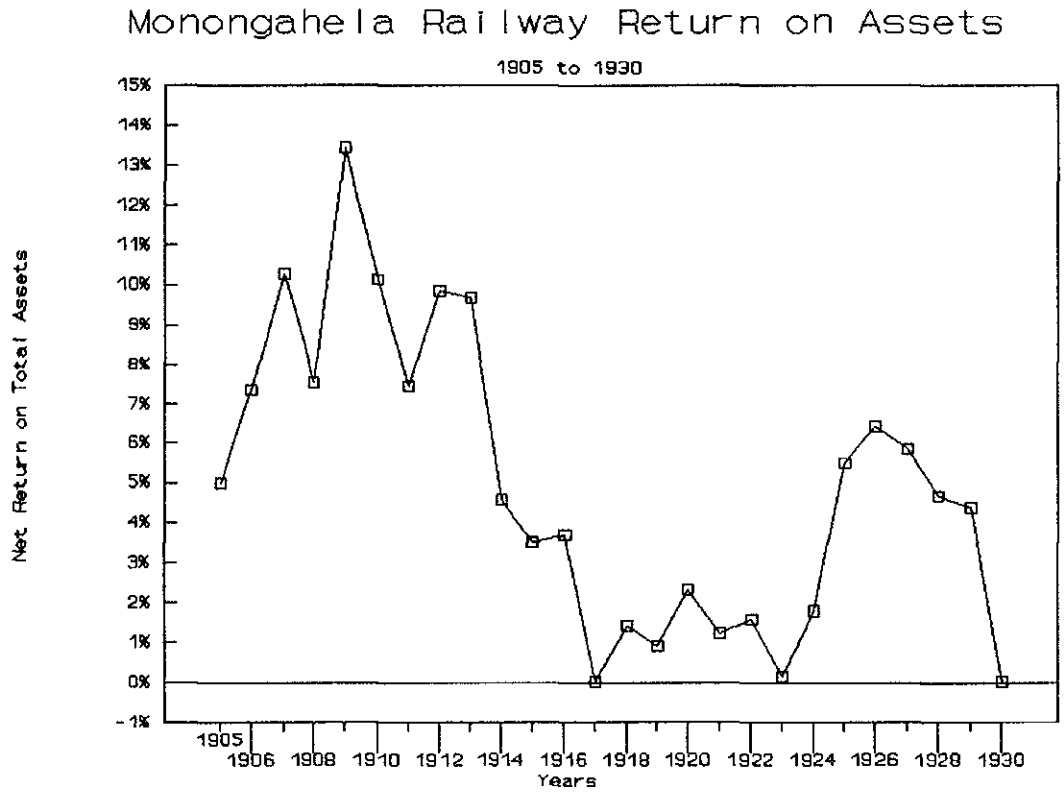

Chart 6

parapet roof, one and a half story arched stone entrance, and marble lobbies seemed to embody the solidity of the company.

Unfortunately, it would be fifty years before the Monongahela Railway would again experience the sustained growth or prosperity of this early period. After 1930, with the onset of the Great Depression, the road entered an extended period of stagnation. Investment ceased while a series of circumstances

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Railway Company archives, various files.

sewed seeds of hardship that were to plague the road for much of the post-World War II era. It was during this second period in the Monongahela's history, from 1930 through 1948, that cracks began to appear in the walls.

1930-1952: THE HAMMER IS RAISED

The Rise of Competition

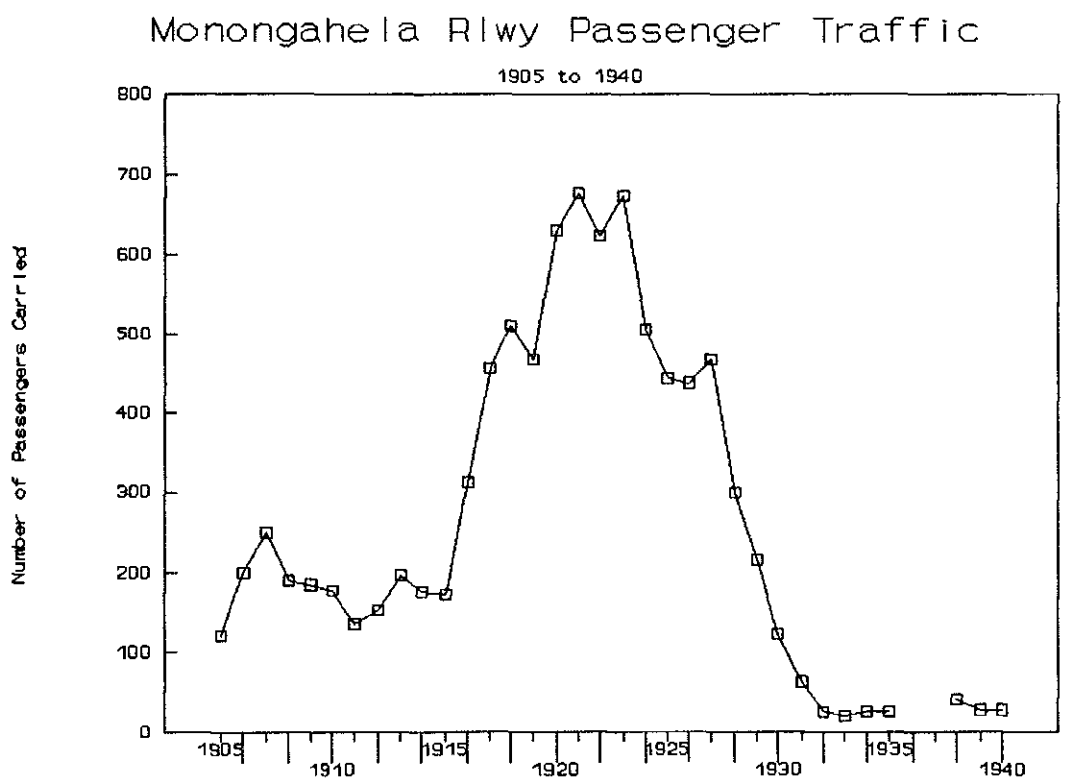

Chart 7

One of these widening cracks was the steady growth of competing modes of transportation, which threatened to siphon away substantial amounts of the Monongahela's traffic. In the arena of passenger traffic, this competition had emerged early in the twentieth century with the formation of the West Penn Railways Company. Organized in 1902 as an amalgamation of 62

trolley lines in Maryland, West Virginia, and Pennsylvania, West Penn operated a network of electric car lines throughout the coal fields of the Connellsville and Klondike coke regions.[84] Extensions of this network reached Brownsville and Masontown in 1908 and brought West Penn into direct competition with the Monongahela for passengers. This competition was advanced in 1911 when the traction company extended its line southward from Masontown to Martin, Pennsylvania. By this time West Penn had trolley lines in operation that almost paralleled the Monongahela rail lines. Chart 7 shows the effects of this competition as the number of passengers carried on the Monongahela peaked as early as 1907, then declined and stagnated until 1915.

This downturn in passenger traffic was reversed after 1915 when the Monongahela merged with the Buckhannon and Northern Railroad. Unable to compete with the low fares of West Penn's trolley service on shorter routes, the merger allowed the company to temporarily evade competition by focusing on longer distance passenger traffic. At this point the Monongahela began running passenger trains from Fairmont as far north as Pittsburgh, generating a considerable increase in the road's passenger traffic. As Chart 7 indicates, the early 1920s were the heyday of Monongahela passenger business as the road carried as many as 677,000 passengers per year.

By 1925, however, two new competitors had entered the field of long distance passenger travel, the automobile and the bus line. This new competition led to a second and permanent decline in Monongahela passenger traffic. In 1930, the Monongahela's annual statement reported

> Due to the decrease in passenger traffic, caused principally by bus line competition and increased use of private automobiles, it was found necessary to discontinue local train Nos. 34 and 37 between Fairmont, and train Nos. 30 and 33 between Brownsville and Randall..."[85]

In 1931 the Monongahela was granted approval to discontinue two of its four daily passenger trains running between Fairmont and Pittsburgh since it was estimated that this passenger traffic was

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[84]Joseph M. Canfield, West Penn Traction (Chicago: Central Electric Railfan's Association, 1968), 9-15.

[85]Monongahela Railway Company Annual Report, 1930, 6.

generating operating revenues of only about one-fourth operating costs.[86] At the close of 1931 only two passenger trains (one each way between Brownsville and Fairmont) remained in service.[87]

While the decline of passenger service may have been disheartening to Monongahela Railway management, revenues from this service had been only 7.3 percent of total operation revenues in its peak year of 1923. Thus, their loss did not threaten the viability of the company. By the 1930s, however, the loss of coal traffic to barge transportation did offer such prospects.

From its formation until World War I, the Monongahela Railway faced little competition in its bread and butter business, the bulk trafficking of coal and coke. By the 1920s, however, this comfortable situation had begun to change as the construction of a modern lock and dam system on the Monongahela River and the development of modern steel barges made river transport a low cost alternative to the railroad.

Interest in river transportation gained its impetus from the severe car shortages of the World War I years. Due to extraordinarily heavy traffic demands during 1917, for example, the Monongahela experienced a shortage of approximately 149,694 revenue cars, or an average of 410 cars per day. This meant that the railway was able to supply only about 55 percent of the cars requested by its customers over the year. In its annual report for 1917, the railroad notes that this shortage forced seven coal and coke producers to turn to river shipments as an alternative means of getting their products to market.

As early as 1916, the region's largest coal and coke producer, U.S. Steel, had been experimenting with river shipments from its operations near Gates, Pennsylvania. From Gates, the company was shipping approximately 1,200 tons of coal per day by barge and saving an estimated 40 cents per ton compared with rail shipment costs.[88] As a result of this experience, the steel corporation designed its vast new by-product coking plant at Clairton to receive its coal by both barge and rail, and made plans to dramatically expand its use of river transportation.

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[86]President's office file 521, Monongahela Railway Company archives.

[87]Monongahela Railway Company Annual Report, 1931, 6.

[88]Monongahela Railway Company Annual Report, 1916, 20, Enman, "Population Agglomerations, 315.

In the 1920s, U.S. Steel installed a new coal handling system in the Klondike region which greatly reduced the company's reliance on rail transportation. This system was comprised of two coal conveyors which ran from inland shipment concentration points to new barge-loading dock facilities on the Monongahela River. The first of these conveyors, opened in 1924, collected the coal from U.S. Steel's three Colonial mines and conveyed it to the Colonial coal dock, which was located along the river just north of Brownsville. The second conveyor system, opened in 1927, originated at Filbert, collected coal mined there and at Buffington, Lambert, Footedale, and Ralph, and moved the fuel to the Palmer coal dock located several miles upriver from Brownsville. These systems were designed to move large amounts of metallurgical grade coal directly to Clairton and circumvent the more costly rail system. By 1944, the superintendent of the Monongahela Railway complained

> The only time [the Monongahela Railway] gets any coal business from [U.S. Steel] is when they can not use the river due to high water or frozen river...present policy of [U.S. Steel is]...to ship all of the coal they can by river...[89]

With the onset of the Great Depression in the 1930s, coal producers turned increasingly to low cost river transportation as a means of reducing expenses. As a result, the tonnages of coal shipped by barge from mines located along the Monongahela Railway multiplied. Chart 8 shows the blossoming of this river traffic in the period from 1932 to 1937, years during which the amount of coal carried by the railroad remained virtually constant. Indeed, between 1930 and 1940 the number of mines along the railroad shipping by river increased from 9 to 23.[90]

To counter this growing threat, the Monongahela Railway and its parent roads attempted legal action designed to prevent the expansion of barge service. Between 1938 and 1940, this railroad group unsuccessfully contested the licensing of the Neville Transportation Company by the Pennsylvania Public Utility

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[89]J.W. Boyd, Superintendent of the Monongahela Railway Company, to C.W. Van Horn, President, 29 July 1944, Monongahela Railway Company archives.

[90]President's office file 542.103, Monongahela Railway Company archives.

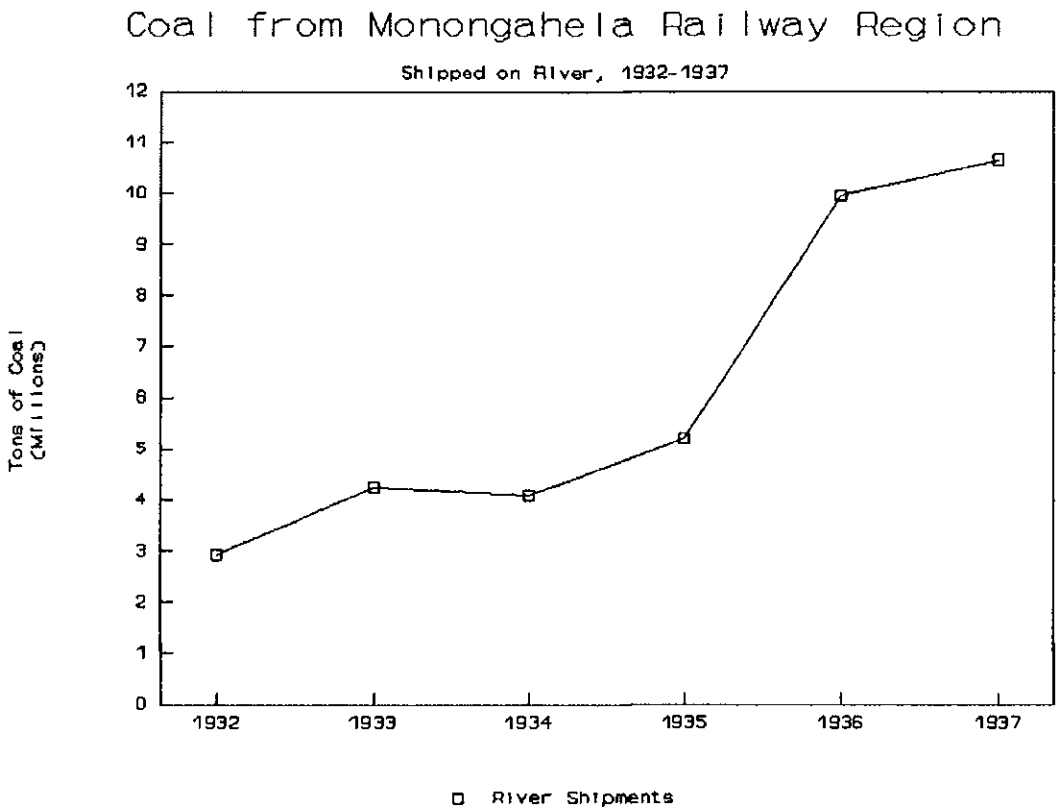

Chart 8

Commission.[91] Neville had been organized by the Hillman Company in order to conduct a barge shipping business on the Monongahela River that would have competed directly with the railway. In their protest of the licensing, counsel for the railroads sought to show that all traffic originating in the region could be expeditiously handled by the railroad. Therefore, they argued,

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[91]Material concerning the Monongahela Railway's suit against Neville Transportation is taken from President's file 600.12, Monongahela Railway Company archives.

no additional common carrier was needed to provide transportation. The protest was rejected, however, and Neville commenced river operations within sixty days of the P.U.C.'s favorable ruling on 12 September 1940.

Effects of Decline in American Coal Consumption

In addition to the rise of competing modes of transportation, a long term decline in American coal consumption appeared as a second flaw in the glowing prospects of the Monongahela Railway during the late 1920s and 1930s. The fortunes of the railway, for better or for worse, were wed to those of the region's coal industry and, for several reasons, the fortunes of King Coal were beginning to slip. First, many urban areas were moving to reduce, and in some cases eliminate, the use of coal for home heating. Pittsburgh, for example, had long been known as the "Smoky City" due not only to its industry, but also because its hundreds of thousands of homes were heated almost exclusively by coal. This created a ghastly pall over the city that made day seem like night, and put so much soot in the air that businessmen were forced to carry a second shirt to work in order to have a clean one for the afternoon. Civic action groups in Pittsburgh and many other cities were pressing successfully for legislation that required the adoption of cleaner burning domestic fuels such as natural gas.

Interestingly, it was just such legislation, in Manhattan, that gave rise to a second important factor in the decline of national coal consumption. During 1925, in response to an ordinance that prohibited the use of coal burning locomotives in Manhattan, the Baltimore and Ohio Railroad decided to experiment with a new type of locomotive, the diesel-electric.[92] This revolutionary source of motive power had been developed initially in Europe but was catching the attention of many American railroad managers by the mid-1920s.

The new diesel-electric locomotives dispensed with coal consumption entirely, deriving their power from diesel-oil burning internal combustion engines.[93] In these locomotives, the internal combustion engine is used to motivate an electric current generator which, in turn, directly feeds powerful

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[92]Lawrence W. Sagle, A Picture History of B&O Motive Power (New York: Simmons-Boardman Publishing Corporation, 1952), 66.

[93]Robert J. Agnew, "Diesel-Electric Locomotive Effects Upon Railway Operating Employees," (M.A. thesis, University of Pittsburgh, 1949), 14-15, and Van Metre, Trains, Tracks and Travel, 201.

traction motors mounted on, or geared to, the axles of the locomotive. The torque of the traction motors produces the motive power of the locomotive and is dependent upon the amount of current flowing through the motors. The engineman varies this tractive force by varying the amount of electricity produced by the diesel generating plant. Although the early models of the 1920s were very large and heavy for the amount of power they generated and were too slow and cumbersome for fast intercity service, their shortcomings were rapidly overcome during the 1930s. By the late 1930s diesel-electric road engines were becoming permanent fixtures in the fleets of many railroads.

The advantages of diesel-electric locomotives over steam power were numerous and included substantial improvements in performance. Because the operator of a diesel locomotive is able to vary the tractive force of the engine by varying the amount of current fed to the motors, he can gradually generate torque and thereby apply maximum starting power to his train. This was not the case with steam engines, however, because the power development of these locomotives was determined by the frequency of piston strokes. At lower speeds, steam engines produced fewer piston strokes and thus generated less power than they did at higher speeds. This meant that steam engines had rising, rather than constant, power characteristics with increases in speed and displayed poorer starting effort.[94] Also, unlike steam engines diesels are not required to stop frequently in order to take on coal and water, do not have to have regular firebox and ashpan servicing, and require minimal ongoing maintenance.[95] These diesel engine characteristics resulted in availability records that startled contemporary railroaders. One diesel locomotive, for example, in passenger service for the B&O in 1939 made the 772 mile run from Washington, D.C. to Chicago for 365 consecutive days with a maximum idle time of 6.5 hours. This 100 percent availability rate could not be approached by steam engines.[96]

Another crucial performance advantage of diesel-electric locomotives lay in their braking systems. Diesel-electrics are able to utilize "dynamic braking" in which their traction motors are employed as generators on downgrades. The current thus produced is then dissipated in the form of heat by being passed through resistors. This system allowed even the earliest diesel locomotives to reduce the required number of air brake

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[94]Van Metre, Trains, Tracks and Travel, 15.

[95]Agnew, "Diesel-Electric Locomotive Effects," 21.

[96]"B&O Diesel on the Job 365 Days in a Year," Railway Age 108, 9 March 1940, 469.

applications by 75 percent, thereby saving substantial wear and tear on brakes and eliminating lengthy delays experienced by steam engines which relied exclusively on air brakes.[97] These delays were necessary following long downgrades because the friction applied by the air brakes to the engine's wheels caused their heat-shrunk steel tires to expand and loosen. Delays were thus needed to allow the tires to cool so as not to fall off.

This superior braking capacity of diesel engines added to other safety benefits derived by the crewmen of the new engines. First, the fact that diesels did not incorporate the dangers of high pressure steam eliminated the continual threat to the workmen of scalding or explosion. Also, diesel locomotives were vastly cleaner in operation than were coal-burning steam engines. While diesels are not completely free of fumes, the smoke created by a steam locomotive, especially in such confined areas as shops, yards, or tunnels, made life for the crews uncomfortable if not hazardous. On some roads it was found necessary to employ electric locomotives to pull steam driven trains through long tunnels in order to avoid asphyxiating the crews.[98]

A final performance advantage of diesels was their excellent thermal efficiency. The internal combustion systems of even the earliest diesel-electric engines were markedly superior in their ability to harness the energy potential of a given quantity of fuel. An average steam engine of the 1940s could recover and translate into useful work only about 8 percent of the total heat in its fuel. At the same time, diesel-electrics were able to utilize about 30 percent.[99] This advantage in fuel efficiency translated into substantial fuel cost reductions for the new engines.

Such fuel savings, however, were only one component in a range of operating cost advantages held by diesel locomotives over steam. Most importantly, diesels require far less maintenance than did steam engines and cost less to keep in operating condition. In part, this may be attributed to the elimination, mentioned above, of many of the routine servicings required by steam engines. It is also due to the use of standardized components in the newer technology.

Steam engines were built by a body of old-line manufacturers whose organizational roots stretched far into the nineteenth

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[97]Agnew, "Diesel-Electric Locomotive Effects," 11-12.

[98]Ibid., 27.

[99]Ibid., 17.

century. These producers built a wide range of locomotive types, often customizing their engines, and engine components, to the particular needs of individual roads. Also, steam locomotives were made up of a relatively small number of heavy, massive parts, whereas diesels are comprised of a large number of smaller parts. Importantly, these smaller parts tend to be of standard design and positioned so as to allow easy access.

In large measure, these design differences are a consequence of the domination of diesel-electric engine production by organizations bred in the mass production industries that emerged in the early twentieth century. In particular, General Motors and General Electric brought their expertise in the use of interchangeable, standardized parts to the locomotive industry by the late 1930s. In 1937, for example, GM's Electro-Motive Division introduced a completely standardized line of diesel-electric locomotives, the 567 series, which had uniform cylinder sizes, interchangeable components, and were designed specifically to facilitate repairs and maintenance.[100] Such standardization allowed railroads to order or stock, rather than fabricate, engine parts, thereby eliminating costly backshop facilities.

Substantial operating cost savings such as these, along with savings in fuel and water consumption, labor costs, and invested capital (because fewer diesels did the same work as a given number of steam engines) made diesel power a clearly superior alternative. As a result, during the late 1930s and 1940s, steam power on the nation's railroads was rapidly supplanted by the new technology. The Chicago, Burlington and Quincy Railroad, for example, was moving all through freight on its main lines and all its named passenger trains by diesel power by the summer of 1947.[101] Nationally, in that same year, diesel-electrics constituted approximately 17 percent of all American locomotives. Indeed, between 1944 and 1949 the number of steam engines in the U.S. fell by 7,963, or 20 percent, while the number of diesels grew by 207 percent.[102]

Dieselization of the Monongahela Railway

The adoption of diesel motive power on the Monongahela Railway took place much later than was the case for most U.S.

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[100]David P. Morgan, Diesels West! The Evolution of Power on the Burlington (Milwaukee: Kalmbach Publishing Company, 1963), 89.

[101]Ibid., 97.

[102]Agnew, "Diesel-Electric Locomotive Effects," 6-7.

railroads. By 1948, 34.5 percent of all passenger trains in the United States were being operated with diesel-electric power while in March, 1949 diesel power moved 33 percent of gross freight ton-miles.[103] Despite this, there is no evidence in the Monongahela's records that the company's management had even begun to consider dieselization at these late dates. This was despite the fact that only six of the road's aging fleet of locomotives had been built since 1920.[104]In fact, the five-year plan for the purchase and retirement of locomotives on the Monongahela, dated 11 April 1945, includes the company's purchase and retirement of five engines over the period 1946-50 (inclusive) but does not mention any consideration of the adoption of diesel motive power. Specifically, the railway planned to replace five old steam engines with five second-hand Mikado-type steam locomotives.[105]This slowness in adopting diesel technology seems to have sprung from two sources - the Monongahela's primary role as a coal carrier and the subordination of its interests to those of its parent companies.

The Monongahela's role as a coal carrying railroad may have retarded its switch to the new technology for several reasons. First, the road's proximity to abundant supplies of coal and, therefore, the relatively low cost of that fuel may have encouraged the company to stay with coal as long as possible. Also, the company may also have put off dieselizing so as not to earn the enmity of its coal producing customers. This is supported by documentation in the company's files which relates to the eventual adoption of diesel power. In particular, referring to a meeting between himself and C.M. Yohe, President of the Monongahela Railway, C.A. Mapp, the district sales manager for a diesel locomotive company states that I.C.C. statistics

> ...certainly support your conviction that, in

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[103]Interstate Commerce Commission, Bureau of Transport Economics and Statistics, Annual Report of the Statistics of the Railways in the United States (Washington, D.C.: Government Printing Office, 1940).

[104]These six steam locomotives were built in 1927. Per J.Z. Heskitt, member of the Committee Considering the Dieselization of the Monongahela Railway, to W.C. Baker, President, 20 November 1950, Monongahela Railway Company archives.

[105]These five steam locomotives were purchased from the P&LE on 14 July 1947 under Authorization for Expenditure 2299. K. Berg, Superintendent of Motive Power of the Monongahela Railway, to C.M. Yohe, President, 11 April 1945, Monongahela Railway Company archives.

> view of the railroad's struggle for economic survival, the coal companies can hardly take exception to the railroad's change from steam to diesel...[106]

Despite this salesman's argument, however, it must be assumed that the coal companies did take exception, and that the Monongahela was quite sensitive to their objections.

Along with this unwillingness to offend its customers, the Monongahela's relationship with at least one of its owning roads also appears to have delayed its dieselization. In records relating to the company's dieselization, it is apparent that executives of the B&O actively impeded efforts by Monongahela Railway managers to modernize. Typical of this obstruction were the efforts of W.C. Baker, Vice President of Operations and Maintenance on the B&O, who was that road's executive liaison with the Monongahela. Baker took his company's turn in filling the Monongahela's presidency in 1950 and, during the years 1949-1952 when the debate over dieselization of the Mon was taking place, repeatedly criticized the accuracy of reports that recommended the adoption of diesel power. When, in 1952, dieselization could no longer be averted, Baker argued for a dramatically slower implementation program than the PRR and the P&LE endorsed.

An important reason for this resistance on the part of the B&O may lie in the fact that that road was itself primarily a coal carrying road. Whereas coal made up 34.8 and 21.7 percent of the tonnages carried, respectively, by the Pennsy and the P&LE in 1945, 52.5 percent of the B&O's freight traffic was coal. As such, the B&O was far more sensitive than its two partners to retaining the good will of coal producers by postponing the elimination of steam motive power.

The Monongahela's subsidiary role also hindered its modernization because its parents tended to think of the railway as an outlet for unneeded steam engines as they themselves underwent the conversion to diesel power. Mr. Baker, for example, raised this point in several of his objections to dieselization of the Monongahela. For example, responding to a letter by J.A. Appleton, Vice President of the PRR, which recommended the immediate purchase of four diesel locomotives by

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[106]C.A. Mapp, District Manager, Locomotive Sales, Fairbanks, Morse & Company, to C.M. Yohe, President of Monongahela Railway, 25 July 1951, Monongahela Railway Company archives.

the Monongahela, Baker urged that the subsidiary road's ten most aged steam locomotives be replaced by steam engines that "...would be available from the joint owners at reasonable cost in connection with their programs of Dieselization."[107]

Despite the efforts of the B&O to the contrary, dieselization of the Monongahela finally began in 1952, following a period of internal debate which lasted from early 1949 through mid-1952. It is significant that at a time when virtually all other railroads were well on the way toward dieselization, the management of the Monongahela spent more than three years weighing the costs and benefits of such a move. Indeed, the lengthy process by which the company's leadership pursued this issue reflects the rigidly bureaucratized structure that, by the late 1940s, plagued the Monongahela Railway.

Official consideration of the adoption of diesel power by the Monongahela Railway[108]began with a letter from J.A. Appleton, Vice President of the PRR and President of the Monongahela Railway, to J.W. Boyd, Superintendent of the Monongahela, on 13 April 1949 in which Appleton commented that

> ...we should make a study...of Dieselization to replace locomotives of this [obsolete] type, so that when such engines are due for classified repairs proper consideration can be given to the purchase of Diesel locomotives, and I will be glad if you will so arrange.[109]

In response to this letter, on 25 August 1949, Boyd and K. Berg, Superintendent of Motive Power for the Monongahela, co-authored a report in which the aged condition of the road's steam locomotive fleet was used as the justification to begin

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[107]W.C. Baker, Vice President, Baltimore and Ohio Railroad Company, to J.A. Appleton, Vice President of Pennsylvania Railroad Company, 10 October 1949, Monongahela Railway Company archives.

[108]Much of the information for the following discussion is from President's office file 410.043.1, Monongahela Railway Company archives.

[109]J.A. Appleton, President of the Monongahela Railway Company, to J.W. Boyd, Superintendent, 13 April 1949, Monongahela Railway Company archives.

dieselization.[110] At that time, the railway owned 54 locomotives, only six of which were less than 25 years old. Boyd and Berg recommended that the company immediately purchase four 1000-horsepower diesel-electric engines to replace the five most elderly steamers.

Boyd and Berg recommended that this first group of diesels be used for any "double-headers" (trains requiring two steam engines) on the Monongahela system, particularly those trains operating on the steeply graded Scotts Run Branch. They recommended this application of diesel power because the use of diesels on double-headed trains would take advantage of their capacity for "multiple unit control." Unlike steam engines, diesels could be linked together in such a way as to allow a single crew to operate more than one engine, thus generating substantial labor savings. This initial report indicated that with an investment of $510,000 ($410,000 for locomotives and $100,000 for facilities) crew cost savings alone would reduce operating costs by $50,267 annually and generate a return on investment of 9.85 percent.

On 29 September 1949, Mr. Appleton passed this report with favorable comments to his counterparts at the other two parent railroads, C.M. Yohe, Vice President of the P&LE, and W.C. Baker, Vice President of the B&O. While Yohe seems to have been favorably impressed with the report, Baker responded within two weeks with a letter criticizing the report and arguing against the adoption of diesel power by the Monongahela.[111]He contended that the facilities required for such a conversion, especially new shops, would be far more costly than the estimates in the report indicated, and would substantially reduce the effective return on the investment. Also, he argued that the purchase of larger steam locomotives by the Monongahela would eliminate double-heading and achieve the same cost reductions as dieselization.

Upon receipt of Baker's unfavorable comments, Mr. Yohe, of the P&LE, wrote a letter to Boyd and Berg asking for further information on dieselization. In essence, he invited their response to Baker's criticisms, which Berg made in a letter of 28

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[110]J.W. Boyd, Superintendent of the Monongahela Railway Company, and K. Berg, Superintendent of Motive Power, to J.A. Appleton, President, 25 August 1949, Monongahela Railway Company archives.

[111]W.C. Baker, Vice President of the B&O, to J.A. Appleton, President of the Monongahela Railway Company, 10 October 1949, Monongahela Railway Company archives.

October 1949 to Yohe.[112]Yohe then forwarded this response to Appleton and Baker on 17 November 1949. In his report, the Monongahela's superintendent of motive power made several important points including

1. The use of larger steam engines in replacement of double-headers on the Scotts Run Branch was not feasible due to the curvature of the track and other conditions.

2. Present repair and maintenance facilities at Osage, West Virginia, near the Scotts Run Branch were adequate for the servicing of diesels while two stalls of the roundhouse at South Brownsville could be converted to diesel repair at minimal cost. Thus, no new shops would have to be constructed.

Berg ended his letter with the diplomatic suggestion that the usefulness of diesel-electrics on the Monongahela be demonstrated by employing two P&LE diesel switchers on the subsidiary road for test runs. Yohe supported this idea in his cover letter to his counterparts and added, responding to Baker's complaints of funding difficulties, that "...some Diesel builders are making propositions to railroads whereby no down payment is required, but that payments are made out of savings which result from the use of Diesels."[113]

Clearly the lines of sponsorship for diesel power had been drawn within the Monongahela's organization by the end of 1949. The leading advocates of dieselization were the immediate operational managers of the Monongahela, who recognized that the road's fleet of steam locomotives was fearfully obsolete and that dieselization offered the company several distinct advantages due to the road's particular circumstances. One of these circumstances was the constant horsepower characteristics of diesels and their resulting ability to develop high tractive power at low speeds. This gave diesels a substantial superiority in moving heavy coal trains over hilly terrain. Also, the great

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[112]K. Berg, Superintendent of Motive Power of the Monongahela Railway Company, to C.M. Yohe, Vice President of the P&LE, 28 October 1949, Monongahela Railway Company archives.

[113]C.M. Yohe, Vice President of the P&LE, to J.A. Appleton, Vice President of the PRR and President of the Monongahela Railway Company, and W.C. Baker, Vice President of the B&O, 17 November 1949, Monongahela Railway Company archives.

amount of remote switching work performed by Monongahela locomotives as they pulled and placed cars at the seventy-odd mines the road served was particularly amenable to diesel power. Unlike steam engines, diesels could be operated or even stationed at remote locations on the line without constructing facilities for coal, water, ash and repair needs.[114]

While the efforts of these internal sponsors to promote the dieselization of the railway were supported by the executive liaisons from the P&LE and the PRR, the resistance of the B&O remained implacable. As a result, no immediate action could be taken on the proposal of Boyd and Berg to purchase just four diesels to take over the double-heading work on the Scotts Run Branch. In the Monongahela Railway's Board of Directors' meeting on 23 November 1949 the matter was discussed at length but ultimately tabled.[115] Also at this meeting a second blow was dealt to dieselization when W.C. Baker assumed the presidency of the Monongahela since it was the B&O's turn to fill the rotating position. This ensured that no significant progress toward dieselization would take place for at least a year.

In April, 1950, H.G. Pike, Superintendent of Equipment for the Monongahela, sent to Baker a report prepared by General Electric's American Locomotive Company subsidiary which analyzed the costs and benefits to be expected by the Monongahela from the adoption of diesel motive power.[116] Baker forwarded copies of this report to Appleton and Yohe under a cover letter, dated 24 May 1950, which detailed no less than five fundamental criticisms of the study.[117] These included the inflation of steam operation unit costs and the similar conservativeness of diesel cost estimates, and the insufficiency of data to support several conclusions.

Perhaps reflecting a rising sense of frustration, Appleton

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[114]Agnew, "Diesel-Electric Locomotive Effects," 49, Monongahela Railway Company archives.

[115]Board of Directors' meeting minutes, 23 November 1949, Monongahela Railway Company archives.

[116]H.G. Pike, Superintendent of Equipment of the Monongahela Railway Company, to W.C. Baker, President, 26 April 1950, Monongahela Railway Company archives.

[117]W.C. Baker, President of the Monongahela Railway Company, to C.M. Yohe, Vice President of the P&LE, and J.A. Appleton, Vice President of the PRR, 24 May 1950, Monongahela Railway Company archives.

and Yohe, in a letter written by Appleton, responded to Baker's letter within four days of its writing. They proposed that a special committee be formed of representatives from the three parent roads and the operational management of the Monongahela so that "...concrete evidence can be obtained as to the savings to be effected [by dieselization]."[118] This committee was subsequently formed and the operational managers of the Monongahela began collecting the evidence necessary to support their recommendations.

A crucial component of this data was the performance of test runs by diesel locomotives on the Monongahela's system. Initially suggested by K. Berg in October, 1949, it appears that such tests became the most important vehicle for delay employed by the B&O interests. On 28 July 1950, W.C. Baker approved the arrangement of a series of tests on the Monongahela using a 1600 horsepower General Electric road switching locomotive. Due to a series of delays and postponements, however, these tests were not performed until 25 June through 29 June 1951.[119] Thus, despite having assembled all the necessary data pertaining to "...the operation and use of [diesel] motive power on the Monongahela Railway..."[120]by the end of October, 1950, the special dieselization committee's report could not be filed until 28 February 1952.[121]

When it was finally filed, however, the special committee's report demonstrated the enormous savings to be expected by the Monongahela through dieselization and appears to have put to rest

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[118]J.A. Appleton, Vice President of the PRR, to W.C. Baker, President of Monongahela Railway Company, 28 May 1950, Monongahela Railway Company archives.

[119]J.A. Bennett, Apparatus Department, General Electric Company, to C.M. Yohe, President of Monongahela Railway Company, 27 June 1951, Monongahela Railway Company archives.

[120]H.G. Pike, Superintendent of Equipment, to other special committee members, 30 October 1950, Monongahela Railway Company archives.

[121]Unfortunately no copies of the committees report exist in the Monongahela Railway Company's records. A summary of its conclusions, however, can be drawn from H.G. Pike's letter covering the submission of the report. H.G. Pike, Superintendent of Equipment and Chairman, Committee Considering the Dieselization of the Monongahela Railway, to C.M. Yohe, President, 28 February 1952, Monongahela Railway Company archives.

the efforts of the B&O to forestall dieselization. The committee found that the complete dieselization of the railway would require an investment of just over $5.8 million, from which the company could expect to achieve annual savings of approximately $897,000, a return of 17.0 percent on its investment.[122] The force of these numbers appears to have ended the B&O's efforts to thwart the dieselization of the Monongahela. On 6 March 1952, just seven days after the submission of the report, the railway placed an order for seven 1200 horsepower diesel-electric road switchers from Baldwin-Lima-Hamilton.[123] This initial order was followed by orders for 12 and 15 1200-horsepower road switchers from B-L-H in 1953 and 1954, respectively.[124] By the end of 1954, no steam locomotives were in active service on the Monongahela as the company's power supply had been completely dieselized.

While on a local level the adoption of diesel power by the Monongahela Railway offered the prospects of considerable cost savings, the adoption of this technological advance by the nation's railroads had more nefarious consequences for the railway. During the steam locomotive era, railroads were one of the largest consumers of bituminous coal in the United States, purchasing, as late as 1948, over 100 million net tons or approximately one-sixth of total U.S. coal production.[125] The

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[122]H.G. Pike, Superintendent of Equipment and Chairman, Committee Considering Dieselization on the Monongahela Railway, to C.M. Yohe, President, 28 February 1952, Monongahela Railway Company archives.

[123]The purchase by the Monongahela Railway of "road switcher" locomotives deserves comment. This type of engine was designed to be a general purpose locomotive, capable of performing both switching and road hauling assignments. They were particularly useful to the Monongahela Railway in the 1950s due to the configuration of its customer base. At this time the road served nearly seventy mines that were small operations by current standards and required the almost daily pulling and placing of revenue cars. With the growing scale of mines, however, the Mon's power needs changed toward more powerful road locomotives.

[124]The seven engines ordered on March 6, 1952 were delivered to the Monongahela in late November, 1952 while the 12 ordered on December 17, 1952 were delivered in June and July, 1953. The company ordered 15 more locomotives on December 14, 1953 but delivery was ultimately taken on only eight of these.

[125]Testimony of J. Carter Fort, Vice President and General Counsel, Association of American Railroads, before the U.S. Senate Subcommittee on Banking and Currency, no date, President's

evaporation of this demand due to the accelerating replacement of coal-burning steam power, combined with the plummeting consumption of coal for domestic heating, promised hard times for the mining industry and its servant, the Monongahela Railway.

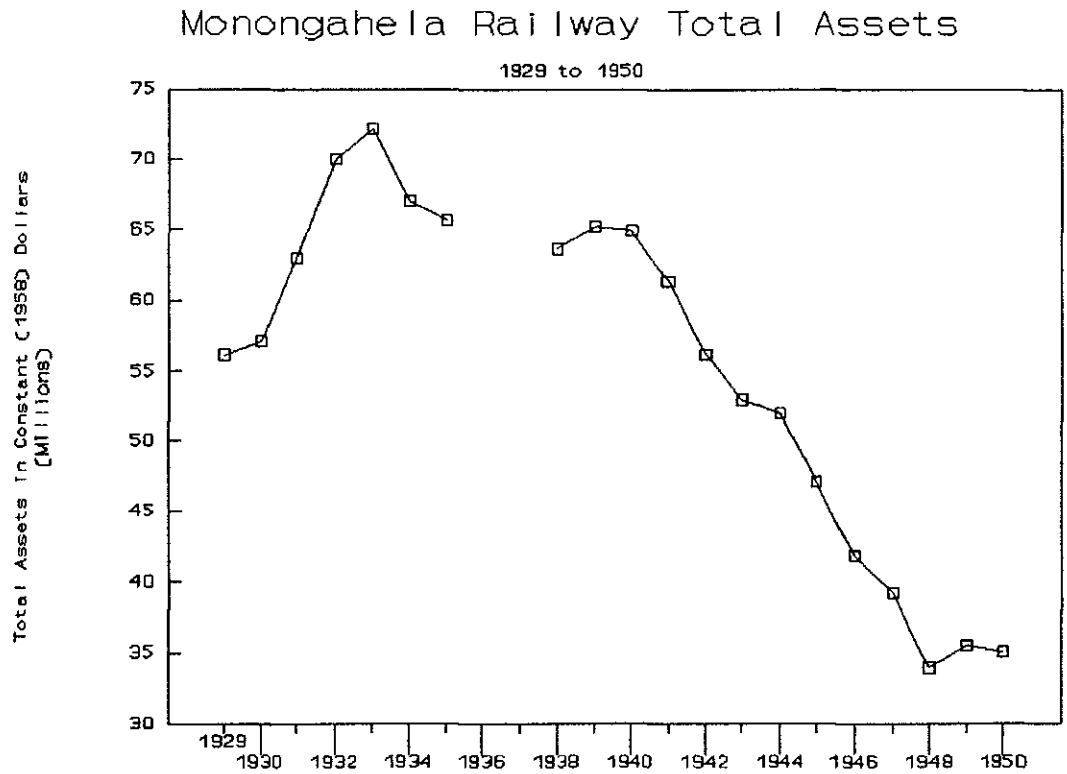

Chart 9

Thus, as the Monongahela Railway entered the 1950s, a decade of prosperity elsewhere in American industry, the company was confronted by the portents of approaching heavy weather.

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office file 623.1, Monongahela Railway Company archives.

Investment in the company's facilities had been minimal since before the Great Depression as the obsolescence of the company's fleet of steam locomotives in 1950 indicates. Chart 9, which shows the steady contraction of the railway's total constant-dollar asset size between 1929 and 1950, further illustrates the company's failure to invest in modern facilities during this period.

This lack of ongoing investment meant that, while promising substantial operating cost savings, the Monongahela's belated conversion to diesel power in 1952 required a huge investment in assets just as the economic conditions surrounding the railroad began to go sour. Prior to this time, the artificially high demand for coal and the temporary resurgence of the Klondike region's coke industry during the extended war period of 1940-1952 had served to mask the consequences for the Mon's performance of long term contraction in coal demand and the growing use of river transportation. The evaporation of this exceptional demand, however, was soon to provide a shocking dose of reality to the company. For the Monongahela, which had staggered through war years propped by enormous industrial demands, the hammer was about to fall.

1953-1980: THE HAMMER FALLS

Organization of the Monongahela in 1953

On paper at least, the Monongahela Railway in 1953 appeared as extensive and vital as it had twenty-five years earlier. The company still operated 176.8 miles of track and employed 49 locomotives and nearly a thousand workers along its system. Traffic originating on the Monongahela reached its markets through connections with the Pennsylvania Railroad at West Brownsville and Brownsville Junction, with the Pittsburgh & Lake Erie Railroad at the Newell Interchange Yard and Brownsville Junction, and with the Baltimore & Ohio Railroad at Leckrone, Pennsylvania and the Catawba Junction near Rivesville, West Virginia.[126]

By this time the Monongahela hauled only freight as competition from buses and automobiles had forced the railroad to discontinue all passenger service in 1950. Writing in 1948, the railway's superintendent explained the reasons for this abandonment:

> ...Referring to our passenger train service which has been operating for years at a loss of between $25,000 and $35,000 per annum:
> You will note from the attached statement that during the year ending December 31, 1946, the operation shows a deficit of $32,000 and that a loss in excess of $37,000 was experienced in 1947...with every indication that the loss for the balance of [1948] will be about the same."[127]

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[126]Discussion of 1953 operations on the Monongahela Railway taken from the testimony of C.H. Siebart, Superintendent of the Monongahela Railway, in Eastern Bituminous Coal Association et al v. Baltimore and Ohio Railroad Company et al., I.C.C. docket 31437, Pennsylvania Public Utility Commission docket C-16031, 18 November 1954, Monongahela Railway Company archives.

[127]J.W. Boyd, Superintendent of the Monongahela Railway Company, to C.M. Yohe, President, 26 August 1948, Monongahela Railway Company archives.

As a result of this letter an application was made to the Public Utility Commissions of Pennsylvania and West Virginia requesting authority to abandon the service. Finally, on 21 October 1950, the roundtrip of trains 806 and 833 between Brownsville and Fairmont ended passenger train service on the Monongahela.[128] Perhaps it was of some comfort to the Mon's managers that the company's nemesis in this trade, the West Penn Railways, was forced to abandon its trolley lines just two years later.[129]

For its freight service in 1953, the Monongahela provided its own motive power, while the road's three owners supplied it with any required revenue cars through their connections. The number of empty cars required from each of its connections was determined by the Monongahela based on the number of loads delivered to each connection during the previous week and the current orders received from the railroad's various customers.

At this time, the Monongahela utilized three engine termini at which locomotives and train crews were stationed. These were located at South Brownsville, at the extreme northern end of the system, at Fairmont, West Virginia at the extreme southern end, and at Osage, West Virginia, about midway along the main line. The South Brownsville operations still served as the road's primary engine facilities, from which locomotives and crews serviced traffic on the main line from Brownsville Junction as far south as Fairmont, West Virginia, and on the Dunlap Creek, Ten Mile Run, and Nemacolin branches. The locomotive and crew facilities at Osage, West Virginia performed work in the Maidsville assembly yard and serviced the customers along the Scotts Run Branch and the main line between Osage and the Pennsylvania-West Virginia state line.

While crews stationed at the various termini of the railway filled a variety of tasks, the responsibilities of those servicing the Dunlap Creek Branch typify the work day of a Monongahela road crew in 1953. This branch, formerly the Connellsville and Monongahela Railway, extended for 19 miles from Brownsville, Pennsylvania through the coal fields of the Klondike region before rejoining the main Monongahela lines along the river in Huron, Pennsylvania. The crews serving this branch started from the South Brownsville Yard, "running light" with only their locomotives, and picked up their trains at one of the three sidings located near the junction of the Dunlap Creek Branch and the main line. These trains had previously been

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[128]President's office file 521, Monongahela Railway Company archives.

[129]Canfield, West Penn Traction, 9.

assembled at the Brownsville Junction assembly yard by crews assigned to that location. The Dunlap Creek Branch crews would then proceed along the branch, pulling and placing cars at the various customer locations along the line and performing any interchange work at the B&O connection in Leckrone, Pennsylvania. Having reached the intersection of the branch with the main line at Huron, Pennsylvania, these trains then turned northward along the main line into the Big Meadow Run assembly yard. There they left their cars and returned "light" to South Brownsville.

The Monongahela's rail system remained as extensive in 1953 as at any point in the company's history, consisting of the main line, which ran from Brownsville, Pennsylvania to Fairmont, West Virginia, and an assortment of branch lines of varying lengths. In addition to the Dunlap Creek Branch, traffic at Brownsville could also cross to the west bank of the Monongahela River at Brownsville Junction and proceed southward over a line leased from the Pennsylvania Railroad to Ten Mile Junction, just south of Millsboro, Pennsylvania. Here the road split into two branches, the Ten Mile Run branch which extended 16.6 miles to Waynesburg, and the Nemacolin Branch which continued to follow the river southward to Nemacolin, Pennsylvania.

Revenue cars carrying traffic throughout the Monongahela Railway network were marshalled at a number of assembly yards that were located at points throughout the road system. One of these was the Big Meadow Run Yard, located five and one-half miles south of Brownsville along the main line. At this yard, empty cars received from the Pennsylvania Railroad at the Brownsville Junction assembly yard or from the P&LE at the Newell Interchange were classified in accordance with the orders of the various mine customers located along the Monongahela's main line. These customer orders would include the number of cars required, the trunk line owner of these cars, and the type and capacity of cars needed.

The yard at Big Meadow Run consisted of eleven tracks connected at both ends to lead tracks, which in turn ran into and out of the main tracks, and several stub-end tracks for train marshalling. The standing capacity of the yard in 1953 was approximately 992 cars and it was serviced by locomotives and crews stationed at the South Brownsville terminal facilities. The Monongahela's other assembly yards were similar to the one at Big Meadow Junction and were located in West Virginia at Rivesville, Lowsville, Maidsville, and near Edna.

The Gathering Storm

By the end of 1953, a storm began to break around the

Monongahela Railway and the company entered its first period of consistent financial distress. The evaporation of artificially high industrial demand during the war period and the collapse of passenger rail traffic, combined with problems rising from the company's conversion to diesel power and the ongoing transformation of the region's coal industry pushed the Monongahela into its first sustained period of unprofitability and, by 1960, threatened the solvency of the firm.

For reasons discussed above, the coal mining industry in the

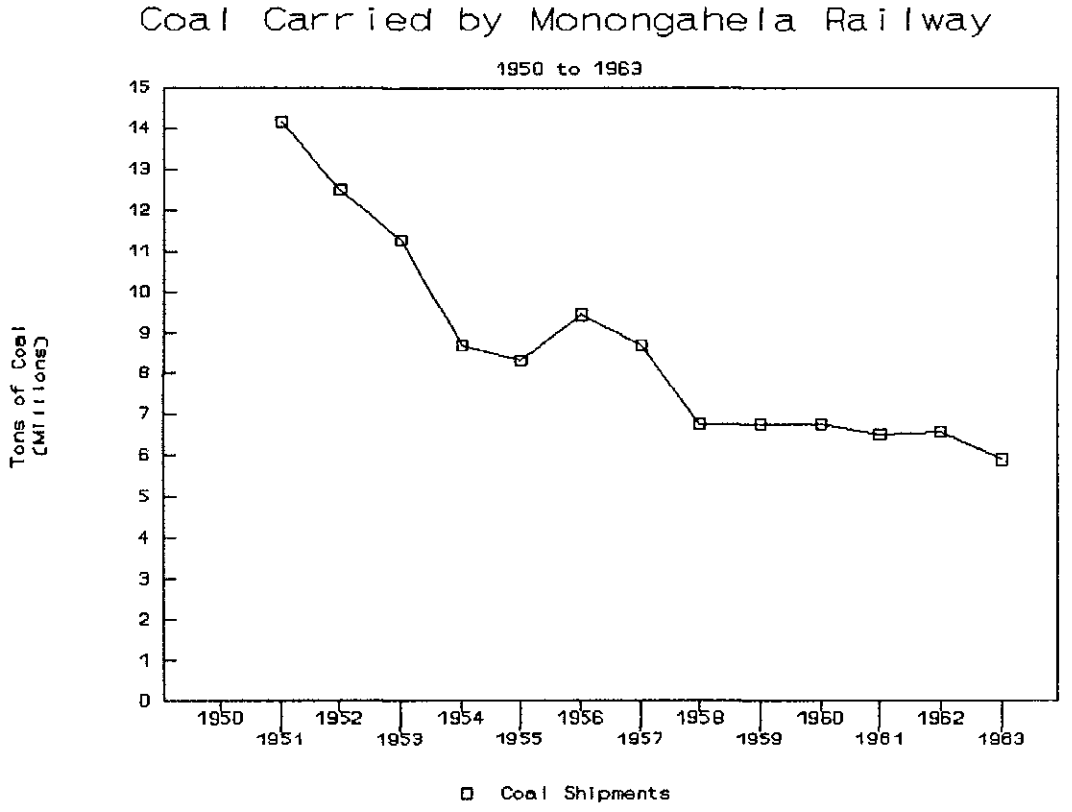

Chart 10

upper Monongahela Valley entered a tailspin in 1953 which saw coal shipments on the Monongahela Railway shrink by nearly 50 percent between 1952 and 1958. As reflected by Chart 10, which shows the railroad's coal shipments from 1950 to 1963, this decline was not simply the reflection of a cyclical business downturn. As the product of long term decline in national coal consumption, the severe contraction of 1952-58 was not followed by recovery but by a stagnation which lasted more than twenty years.

The consequences for the Monongahela Railway of the general contraction of coal production were compounded by the exhaustion of resources in those areas most extensively served by the company's tracks. This was particularly true in the Klondike region where, by the 1960s, coal reserves had been largely depleted.[130] By this time the remaining mining activity on the Monongahela's routes had shifted to northern West Virginia, where about 90 percent of the railroad's coal tonnage originated in 1953.[131] As the production of older sections such as the Klondike faded into obscurity, many of the Monongahela's lines became dangerously unprofitable. Unable or unwilling to abandon these lines despite the fall-off in business through the 1950s, the Monongahela began to carry an increasing burden of unjustifiable fixed costs.

Meanwhile, surviving coal operators continued to take advantage of low cost river transportation whenever possible. By the end of 1957, the amount of coal carried on the river from mines along the Monongahela's system had grown to 71 percent of the tonnage carried by the railroad.[132] This trend was especially distressing because the few new operations being developed in the region, such as U.S. Steel's Robena mine in Greene County, Pennsylvania, were being designed to utilize rail transport only when river transport was unavailable.

The growing scale of these new mining operations also altered the circumstances in which the Monongahela did business. The Robena Mine, for example, was of a scale previously unseen in

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[130]The extent to which the mines in the old coke regions of Fayette County, both the Connellsville and the Klondike regions, were being abandoned during this period is reflected by the fall in the county's population from 200,900 in 1940 to 154,667 in 1970.

[131]Siebart testimony, 3.

[132]Monongahela Railway Company Annual Report, 1957, and President's office files, Monongahela Railway Company archives.

the region, producing over four million tons of coal in 1951.[133] In the same year, the average tonnage hauled for the 64 mines served by the Monongahela Railway was only 221,000 tons.[134] Indeed, while the tonnage hauled by the Mon remained fairly stable from 1954 through 1981, the number of mines the company served fell from 64 in 1951 to 13 in 1964, and remained at eight in 1981.[135]

This decrease in the number of mines served by the Monongahela and the growing scale of those surviving operations imposed several hardships on the railroad. First, the smaller number of mines meant that fewer locomotives, workers, and facilities were needed to serve the mines. In earlier years the road employed a relatively large fleet of engines to pull and place cars at the numerous mines, and to marshall these cars into trains for road haulage. With fewer, larger mines, however, many of these services were no longer needed and the company was faced with a costly underutilization of its engines and other overhead.

The increasing scale of mining operations also led to the adoption of "unit train" services, which further reduced the utilization of the Monongahela's facilities. Under this arrangement, a train of coal cars is loaded at a mine and delivered intact to a single customer, thus minimizing handling and operating expenses. This service began on the Monongahela Railway in 1962 with the operation of unit trains from Consolidation Coal Company's Loveridge Mine in West Virginia.

The unit train arrangement established between the Loveridge mine and a utility in Bow, New Hampshire in 1967 typifies the nature of this service.[136] First, a train of empty cars would be loaded at the Loveridge Mine and delivered by the Monongahela Railway to Brownsville Junction, where it would be received by a P&LE crew and attached to P&LE locomotives.[137] The P&LE crew would then transport the train 119 miles to Youngstown, OH, where

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[133]Enman, "Population Agglomerations," 319.

[134]Monongahela Railway Company Annual Report, 1951.

[135]President's office file 110.3, Monongahela Railway Company archives.

[136]Discussion of Loveridge-Bow unit train service taken from President's office file 522.31, Monongahela Railway Company archives.

[137]President's office file 522.31, Monongahela Railway Company archives.

it would be taken over by a New York Central crew and driven the 461 miles to Rotterdam Junction, NY. Here the train would be received and operated by crews from the Boston and Maine Railroad, who would drive the remaining 231 miles to Bow, NH. After being emptied at the utility plant, the empty cars would be returned to Loveridge Mine by reversing the progression of connections.

The Monongahela's adoption of this service lowered operating costs and reflected an industry-wide trend toward unit train operations, but it proved detrimental to the road's financial performance for several reasons. First, the elimination of all switching and assembly for trains bound for the large Loveridge Mine increased the underutilization of the company's assets. Also, the inability of the Monongahela's Baldwin-Lima-Hamilton road switcher locomotives to be operated as "multiple units" with other types of diesel locomotives prevented the company from participating in the pooled power arrangement for this unit service. The trains for the Bow, NH service were powered by a five-locomotive unit consisting of one Boston and Maine, three New York Central, and one P&LE engine, but no Monongahela engines. As such, the Mon lost an opportunity to employ a portion of its underutilized locomotive fleet in revenue generating service.

By the early 1960s, then, the company faced a crisis of excess overhead as a result of its dramatically reduced power needs. The initiation of unit train service and the progressive abandonment of smaller local coal operations forced the company to place seven of its 27 locomotives in long term storage despite stable coal shipments.[138] In addition to these locomotives, the company continued to pay for expensive yard and shop facilities that had been constructed under outdated operational circumstances and were no longer generating income. This placed a substantial drain on the railroad's profitability.

The reduction in switching operations due to unit train services also fundamentally altered the Monongahela's power requirements and forced the company to employ its locomotives in a suboptimal manner. As was discussed above, the diesel engines purchased by the Monongahela in 1952-54 were "road switchers," which were characterized by lower horsepower ratings and were most useful in switching and short hauling roles. With the adoption of unit train service, however, the hauling needs of the railroad evolved toward lengthier trips operated on a turnaround basis with no switching or assembly. This meant that the 1200

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[138]Report of the Operating Committee, 13 October 1963, Monongahela Railway Company archives.

horsepower diesel locomotives owned by the railway were increasingly unsuitable for the work required. When this original fleet of light diesels was replaced in 1969, therefore, they were replaced by a fleet of 2000 horsepower GP-38 locomotives that were among the heaviest ever built by the Electro-Motive Division.[139]

Compounding the difficulties caused by the transformation of the coal mining industry in the Monongahela's region, the company's conversion to diesel power proved to be far more troublesome than had been anticipated. Initially, the engines themselves performed admirably, fulfilling or exceeding the expectations of the Monongahela's operating officers. In a letter dated 29 July 1953 to W.C. Baker, who was again serving as president, H.G. Pike reported that the diesels were filling all road and yard assignments without problem, that diesel running times were equal to, if not better than, those of steam-driven trains, and that, overall, the diesel locomotives were "...doing somewhat better than anticipated in the Special Committee's report..."[140] In fact, the President's office reported that the actual net annual savings from the use of diesel engines was $700,000 in 1953 alone.[141]

Despite this, however, dieselization required a massive investment by the railroad just as the region's coal industry entered a severe contraction. Indeed, the scale of investment in diesel engines and facilities by the Monongahela was matched, historically, only by the railroad's building program of the late 1910s and early 1920s. Fortunately, though, this earlier expansion had been supported by a concomitant business expansion which eased the financial burden to the company. In the mid-1950s, however, this was not the case. From 1952 through 1958, as the Monongahela expended $3,124,455 for diesel locomotives and facilities, the total tonnage it carried fell by nearly 50 percent. By 1960 the combination of these forces had precipitated an organizational crisis which plagued the company for at least twenty years.

During this period of dieselization, the Monongahela Railway

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[139]Porter interview, 30 July 1992.

[140]H.G. Pike, Superintendent of Equipment of the Monongahela Railway Company, to W.C. Baker, President, 29 July 1953, Monongahela Railway Company archives.

[141]Report of the President's Office, 11 December 1953, President's office file 410.043.1, Monongahela Railway Company archives.

was forced to spend scarce funds on not only locomotives but on facilities to support the new engines. In 1953-54, for example, the company expended $134,698 to construct at South Brownsville a concrete pump house, an oil piping system, a five-ton sand tower equipped with five hoses, a tank shop, several fueling columns and install various pieces of machinery for diesel engine maintenance.[142] Over the period from 1952 through 1958 the railroad spent nearly $200,000 on diesel facilities.

In addition to these costs, the railroad was also forced to retire its entire fleet of 51 steam locomotives as well as a wide range of facilities that were no longer useful in the diesel environment. These included the water and coal stations located throughout the Monongahela's system, and a range of assets at the South Brownsville yard that included the coal and sanding station, ash conveyor, flue shop, boiler washing system, 200,000 gallon water tank, and many large pieces of shop machinery.[143] The total value of steam era assets written off by the railroad from 1952 through 1958 was $2,249,075.[144]

It was also the case that the usefulness of many of the railroad's shop facilities decreased dramatically with dieselization. While not immediately dismantled, items such as the roundhouse and turntable quickly became anachronisms. For example, since diesel engines did not require the time-consuming chores of boiler washing and flue cleaning, which were primary activities of the roundhouse, far fewer stalls were needed for maintenance and many were converted to storage areas. Also, the drop tables in the roundhouse were used exclusively for wheel work on steam engines since the overhead crane in the erecting shop was a more efficient means of pulling diesel engines off of their trucks in order to permit wheel work to be performed. Steam locomotives, on the other hand, were far more difficult to work with than diesel engines due to their complexity of design and the larger size of their wheels.[145] Also, the passing of the steam era eliminated much of the overhaul work performed in the erecting shop and made bays that would once have been occupied

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[142]The machinery added included a valve refacer, a portable motor generator battery charger, and a nozzel tester. Authorization for Expenditure 2553, Monongahela Railway Company archives.

[143]Authorization for Expenditure numbers 2729 through 2736, Monongahela Railway Company archives.

[144]Monongahela Railway Company Annual Reports, 1952-58.

[145]Porter interview, 30 July 1992.

with heavy repairs available for wheel work.

Perhaps even more significantly, the dieselization of the Monongahela Railway permanently and drastically reduced the company's demand for labor. This imposed both personal hardships on hundreds of furloughed workers and a severe organizational dislocation on the railway. While technological advances had been putting downward pressure on the size of railroad work forces even before the onset of diesel power, this process had been a gradual one. The changes wrought by dieselization, on the other hand, came swiftly, eliminating the need for hundreds of both operating and yard workers within a few years.

As was mentioned above, one of the earliest selling points of diesel motive power was the fact that their use greatly reduced the number of operating crewmen required. Of these running trades workers, the plight of the firemen was typical. In the steam power environment, the locomotive fireman was responsible for producing the power that was used by the engineer. In the new diesel technology, the power that was used, however, was supplied by fuel fed automatically to the engine cylinders by a continuously operating pump. The control of that flow was entirely in the hands of the engineer who regulated it through manipulation of the throttle. The role of the fireman, therefore, became superfluous. In fact, the earliest diesels had been designed to be operated by just one crewman, the engineer.[146]

In order to protect the positions of a vast number of its members, the Brotherhood of Locomotive Firemen and Enginemen employed a series of strike votes in 1936-37 to force the carriers to agree to a second man in the cab. The National Diesel Agreement, which was negotiated in March, 1937, committed the railroads to employing a man taken from the ranks of the firemen as a helper on all main-line trains and on all switching engines weighing over 90,000 pounds.[147] In order to create work for this individual, the companies requested that locomotive builders de-automate several engine functions, such as the control of the engine radiator shutters, so as to create

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[146]At the same time, train crews for all steam engines operating within the state of Pennsylvania, whether in mine, yard, or road service, included six men: an engineer, a fireman, a conductor, a flagman, and two brakemen. For trains operating only within West Virginia, the Monongahela could employ five-man crews. Siebart, 15, Monongahela Railway Company archives.

[147]Agnew, "Diesel-Electric Locomotive Effects," 53-54.

additional engine responsibility for the helper.[148] While softening the impact of the technological change on running crews, however, the National Diesel Agreement offered no protection for workers in the shop areas or on the various facilities which serviced the steam fleets.

One scholar, writing in 1949 on the consequences of dieselization for railroad workers commented

> ...It is probable that the mechanical and maintenance employees have felt more the impact of the diesel-electric locomotive than the operating employees...it is worthy of note that severe declines have been noted in the employment of such trades as blacksmiths, molders, boilermakers, and machinists...[149]

At the Monongahela, the contraction in shop craft employment was dramatic as the total number of workers in such occupations fell from 185 in 1945 to 86 by 1957, and continued to drop throughout the postwar period.[150] Chart 11 shows this decline in shop craft employment over the years after 1945. Only the employment of electricians increased slightly, from four in 1945 to eight in 1957, since much of the repair work on diesel locomotives is of electrical equipment and required a new set of skills.

Although it is impossible to distinguish between the declining traffic on the Monongahela and dieselization as sources of this employment decline during the 1950s, the relative stability of tonnages after this decade combined with continued decline in employment seem to lay the preponderance of responsibility on dieselization. This was especially true in the 1980s when the resurgence of the region's coal industry pushed Monongahela Railway shipment tonnages to record levels but did not substantially increase employment levels.

Nevertheless, the combination of the evolving coal trade, the costs of dieselization, and the organizational dislocations brought on by this new power technology pushed the Monongahela to brink of failure by 1960 and generated a period of sustained

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[148]Ibid., 55.

[149]Ibid., 97.

[150]Employment figures taken from Monongahela Railway Company departmental seniority lists, 1922-1992.

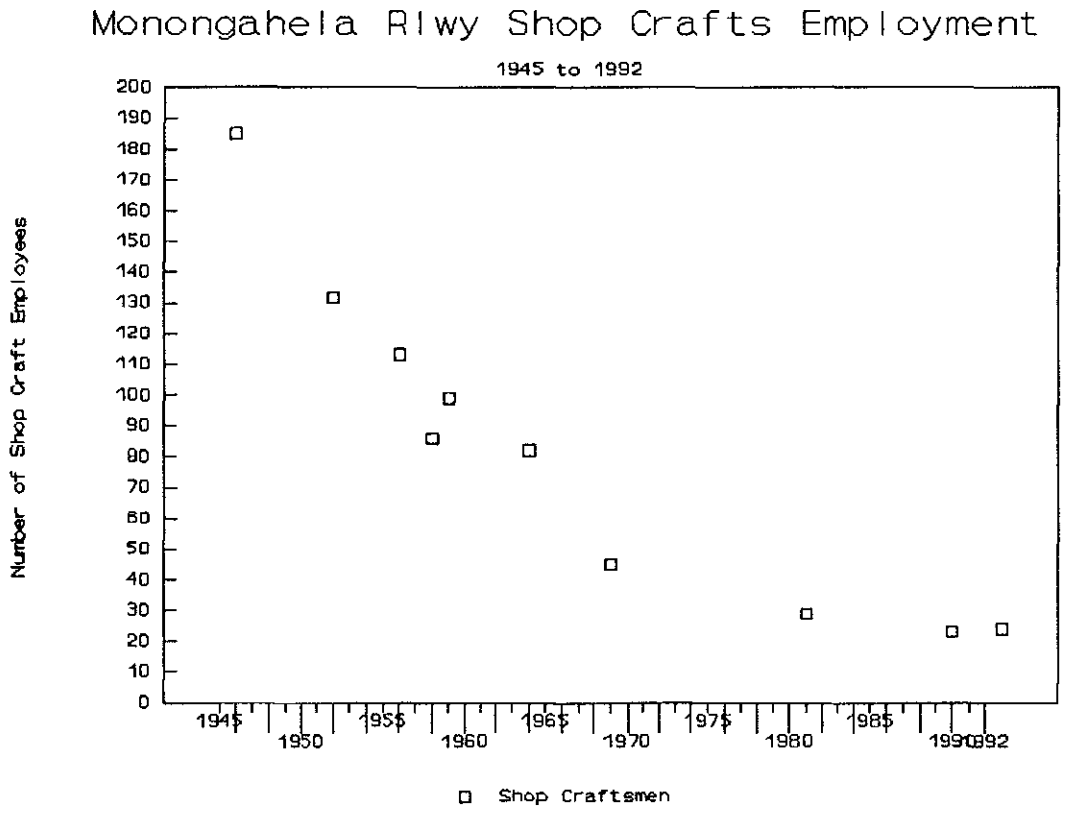

Chart 11

hardship for the road that lasted until the 1980s. Chart 12 illustrates the financial difficulties experienced by the Mon during the postwar period as the company lost money in 16 of the years between 1952 and 1980.[151] Unfortunately, the financial difficulties of the Monongahela during these years were similar to those being experienced by its parent railroads and the subsidiary could hardly turn to them for assistance.

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[151]Monongahela Railway Company Annual Reports, 1952-1958.

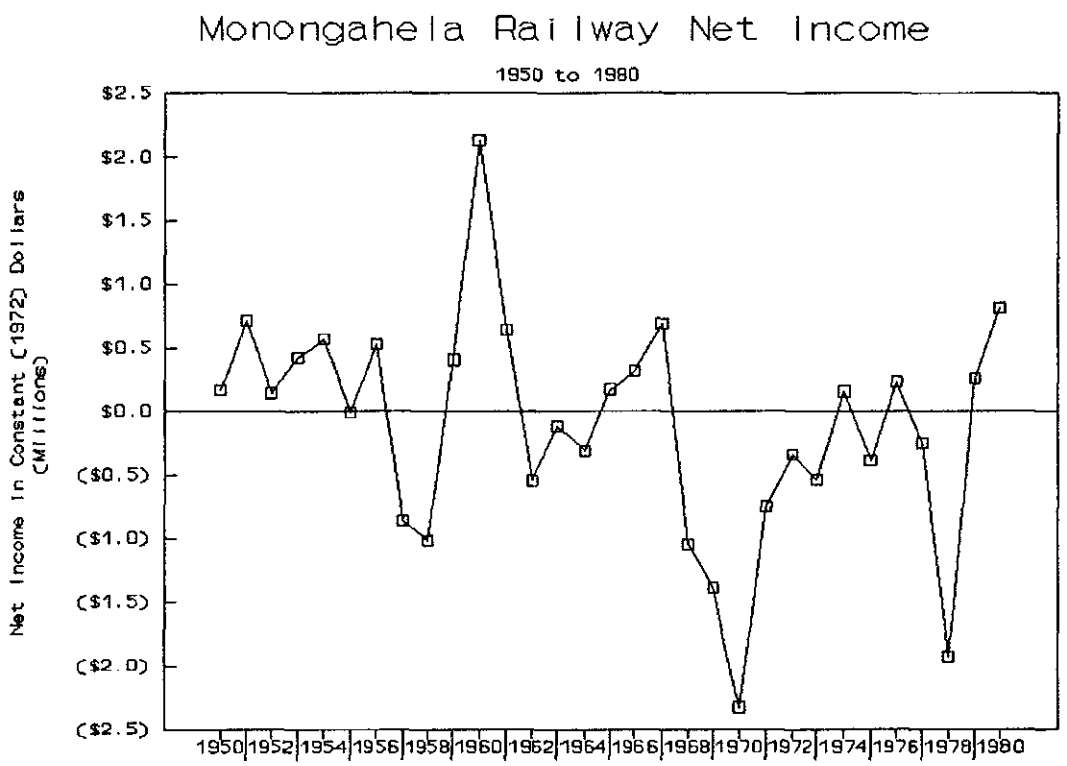

Chart 12

In efforts to maintain the viability of the Monongahela, its owners commissioned several efficiency studies, the first of which took place in 1960. The conclusions of these analyses were consistent across the period: the Monongahela must pare down its operations in accordance with its new economic environment. The study performed in 1960, for example, recommended that the Monongahela reduce its locomotive fleet size, substantially decrease employment, and reduce shop operations from three to two

shifts.[152] Subsequently, the railway also retired numerous unprofitable lines, such as the entire Dunlap Creek Branch which closed in 1977, and further reduced work at the South Brownsville shops from two to one shift. As a result of these efforts, employment on the Monongahela, including management and clerical workers, fell from 923 in 1949 to 225 in 1975.

In the face of these painful efforts to reduce costs and overhead, in the lean years of the late 1960s the Monongahela took a bold step in response to the evolution of the region's coal industry: it built a new main line. As mining operations in the Monongahela's territory moved gradually westward towards central Greene County, Pennsylvania, the railroad was faced with a dilemma. In order to service this area, it would have to rehabilitate and extend the old Scotts Run Branch, with its tight curves and steep grades, or construct a new line from Waynesburg, Pennsylvania southward into the region. Since the extension of the Scotts Run Branch would have necessitated driving a tunnel at Cassville that would have required the removal of 3 million cubic yards of sandstone, the company chose to construct a new line, the Waynesburg Southern.[153]

In 1971 the 36-mile Waynesburg Southern line was opened from Waynesburg to Brave, Pennsylvania, thereby providing access to southern Greene County and replacing the old Scotts Run Branch.[154] Initially, however, the construction of the new road appeared to be yet another disaster for the railway as production from the three mines along the road proved far smaller than had been anticipated. An explosion and fire reduced production at the Blacksville No.1 mine to 50 percent of capacity while sporadic strikes and production slowdowns diminished output at the other mines. Additionally, Consolidation Coal Company's Arkwright and Humphrey mines, which together accounted for 38 percent of the Monongahela's coal tonnage in 1967, converted all of their rail tonnage to movement via river barge in 1969. As a result of reduced production at the Waynesburg Southern mines and the loss of the Arkwright and Humphrey traffic, the railway's shipment tonnages remained flat despite the opening of the new line.

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[152]J.W. Barriger, President of the Monongahela Railway Company, to W.C. Baker, President of the B&O, 23 November 1960, Monongahela Railway Company archives.

[153]J.W. Barriger, President of the Monongahela Railway Company, to M.S. Smith, Vice President and Regional Manager of the PRR, 28 December 1959, Monongahela Railway Company archives.

[154]The Scotts Run Branch was completely abandoned in 1975.

These forces again placed the Monongahela in severe financial straits as the company generated positive net income in only two of the years between 1968 and 1979. Despite these financial difficulties, however, the building of the Waynesburg Southern was to prove crucial to the Monongahela's return to profitability in the 1980s. By 1980, the company's management had successfully pared its operations such that, even with continued flat tonnages, the road was able to generate healthy profits. Meanwhile, mining development along the Waynesburg Southern expanded dramatically, pushing the Monongahela into a new era of prosperity during the 1980s. Indeed, by the early years of that decade it was apparent that the railroad's thirty years of hardship were at last at an end.

1980-1992: RESURGENCE

During the 1980s a resurgence of the coal mining industry in the Monongahela Railway's territory propelled the carrier's freight tonnages and revenues to new record levels. Charts 13 and 14 indicate the strength of this resurgence by showing the company's steadily climbing net income figures for 1975-1990 and coal shipment tonnages, 1960-1991. By the end of 1982, all of the financial advances made to the company by its parents during

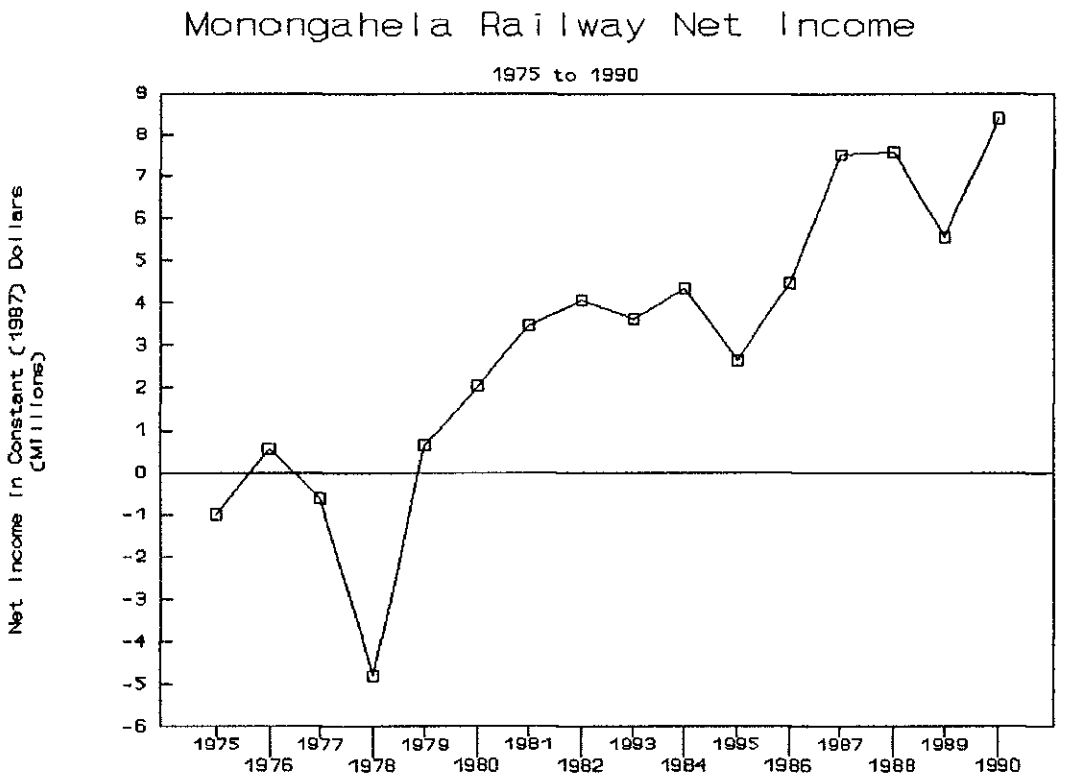

Chart 13

the nearly fatal crises of the early 1970s had been repaid. The only remaining payable was a group of Series B bonds issued by the company in 1941 for a total of $6,927,000 which had been taken over by the parent roads in 1966.[155] Chart 14 highlights the spectacular record of the Monongahela during the 1980s by placing it into the context of the railway's return on assets performance since 1905. As this graph makes clear, the 1980s was

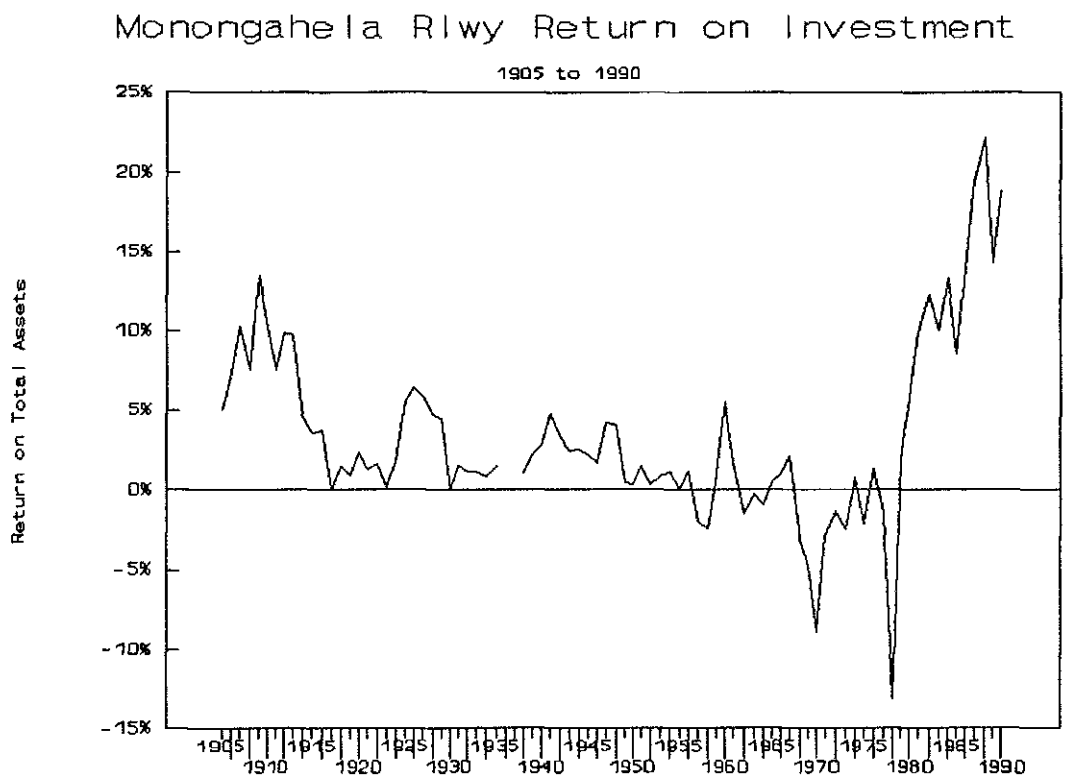

Chart 14

[155]Monongahela Railway Company Fact Book, 1982, 4.

a period of prosperity rivalled only by the earliest years of the firm's existence.

The source of much of this growth was the rapid development of area coal resources, particularly by the Consolidation Coal Company, for export through the port of Baltimore. These newly

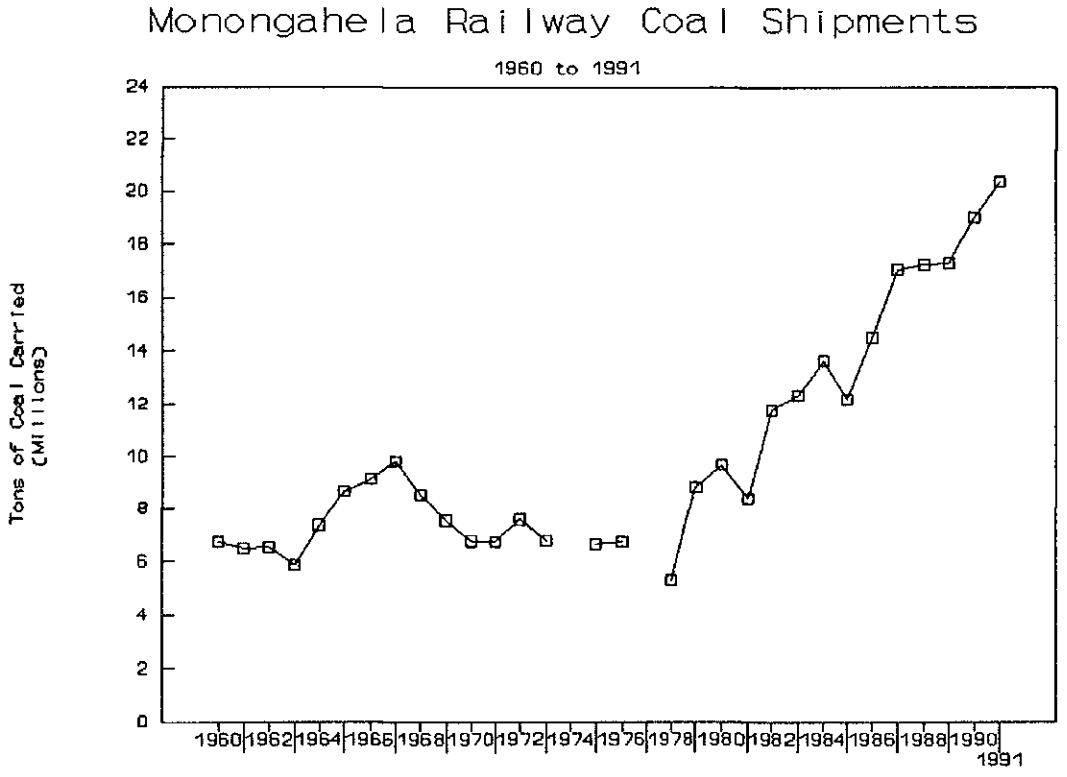

Chart 15

developed operations were of enormous scale and included some of the largest underground mines in the world. For example, Consolidation Coal Company's Bailey Mine, built in 1984 on a rail spur connected to the Mon's Waynesburg Southern line, remains in

1992 the largest deep mine in the western hemisphere with an annual production of approximately six million tons.

As of 1992, operations on the Monongahela Railway were organized into two divisions, the East and the West divisions.[156] The West Division ran from West Brownsville, Pennsylvania through Fredricktown, where it became the Ten Mile Branch, to Waynesburg, Pennsylvania. There it became the Waynesburg Southern Railway, and continued on to Brave, Pa. The West Division serviced four mines which produced the great preponderance of the coal shipped by the Monongahela Railway. These mines were the Emerald Mine in Waynesburg, Pennsylvania, Federal No. 2 mine in Bula, West Virginia, Consolidation Coal Company's Bailey Mine in Graysville, Pennsylvania and that company's Blacksville No. 2 mine in Wana, West Virginia. The Bailey Mine alone originated approximately 28 trainloads of coal per week, while the other three mines on the West Division averaged 8-9 trainloads per week.

The East Division of the Monongahela Railway consisted in 1992 of what was formerly the road's main line extending from Brownsville, Pennsylvania along the east bank of the Monongahela River southward to Fairmont, West Virginia. This division was comprised of two roads, the River Division from Brownsville along the river to Catawba Junction, near Fairmont, and the Paw Paw Branch which ran from Catawba to the Loveridge Mine. While the East Division serviced one more mine than did the West Division, or a total of five mines, the tonnage of coal originated along the East Division was dwarfed by that of its sister. In 1992, the East Division serviced the Shanopin Mine in Shanopin, Pennsylvania, Consol's Loveridge Mine, and three mines in Maidsville, West Virginia: Consol's Humphrey Mine, the K & J Mine,and the Anchor Energy Mine. Each of these mines originated only about one trainload of coal per week except the Loveridge Mine, which averaged approximately five per week.

Except for one train crew which was stationed at Maidsville, West Virginia to service the Loveridge Mine, all power and crews on the Monongahela Railway operated out of the company's South Brownsville Yard. By then, the road utilized a rotation of about 22 train crews, each of which were comprised of an engineman, a conductor, and a brakeman. All train assembly for the Monongahela was performed by Conrail at that company's yard in West Brownsville, Pennsylvania while the former assembly yards of the Monongahela at Big Meadow Run and Fairmont had been abandoned. Use of the additional tracks at the former Maidsville, West Virginia yard was by 1992 limited to small

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[156]George Yatsko, Movement Director of Monongahela Railway, interviewed by author, 25 July 1992.

loading and passing while car interchanges took place with CSX at Catawba Junction, with the Pittsburgh and Lake Erie at the Newell Interchange, and with Conrail at West Brownsville.

In addition to these arrangements, the Baltimore and Ohio has, since 1990, had trackage rights over Mon lines from Catawba Junction to the Newell Interchange. Originally this was a detour of traffic from the CSX's Sheepskin Branch when a landslide buried a portion of that road. The B&O has since abandoned the Sheepskin Branch, however, and its detour over the Monongahela's East Division has become a permanent arrangement.

With the return to prosperity, the Monongahela invested substantial sums during the late 1980s and early 1990s on modern equipment. These investments included the computerization of financial activities that were performed by pencil through 1987, the installation of computerized traffic management systems, and an extensive program of line maintenance which was designed to make up for as much as twenty years of neglect. This road work and the adoption of continuously welded rails allowed the elimination of numerous "slow" orders throughout the Monongahela's lines and considerably improved the performance of the company's carrying services.

The yard and shop facilities of South Brownsville by 1992 were a pale reflection of the bustling, smoky operations of the steam era. By 1986, for example, only four stalls of the old roundhouse were still in use as inspection stalls, and in 1991 the structure was completely dismantled. The turntable that served the roundhouse remained in operation in 1992 and was used occasionally to turn locomotives around and to allow access to the two corrugated metal sheds that had been built on a portion of the roundhouse site. In that year less than thirty employees populated the once teeming erecting, machine, and car shops, while the number of maintenance of way workers had fallen below 100.[157]

The locomotive shops operated only one shift during the work week in 1992 and were responsible only for minor maintenance of the company's fleet of eleven General Electric Super 7, 2250 horsepower locomotives. At this date, the railroad still did not own any of the revenue cars used to carry freight on its lines, but by then about 30 percent of those cars were owned by the utilities or mining companies the road served. Because virtually all coal on the Monongahela was now handled in unit trains which required no switching or assembly, the railway no longer

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[157]Departmental seniority rosters, various dates, Monongahela Railway Company archives.

maintained yards or yard crews.

Ownership of the railroad had also changed as Conrail, the organizational successor to the bankrupt Pennsylvania and New York Central systems, purchased the one-third interest of the B&O (in 1992 a part of the CSX system), and the P&LE, which appeared to be on the verge of dissolution. Having assumed sole ownership in 1990, Conrail in early 1992 gained I.C.C. approval to absorb the Monongahela into its vast network. With this consolidation, planned for the second half of 1992, the Monongahela Railway will cease to exist as an independent entity and the big red "M" on its locomotives will be unceremoniously painted over with the colors of "Big Blue." Thus will end the 93-year history of the Monongahela Railway Company.

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